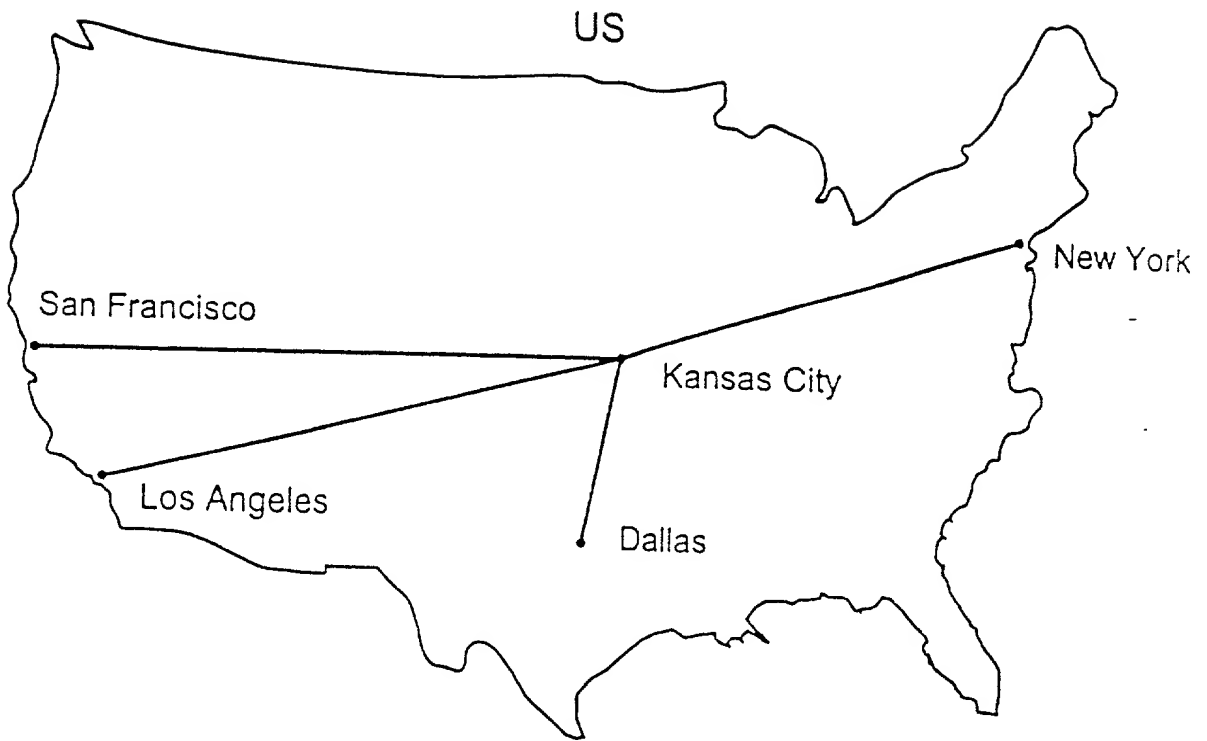
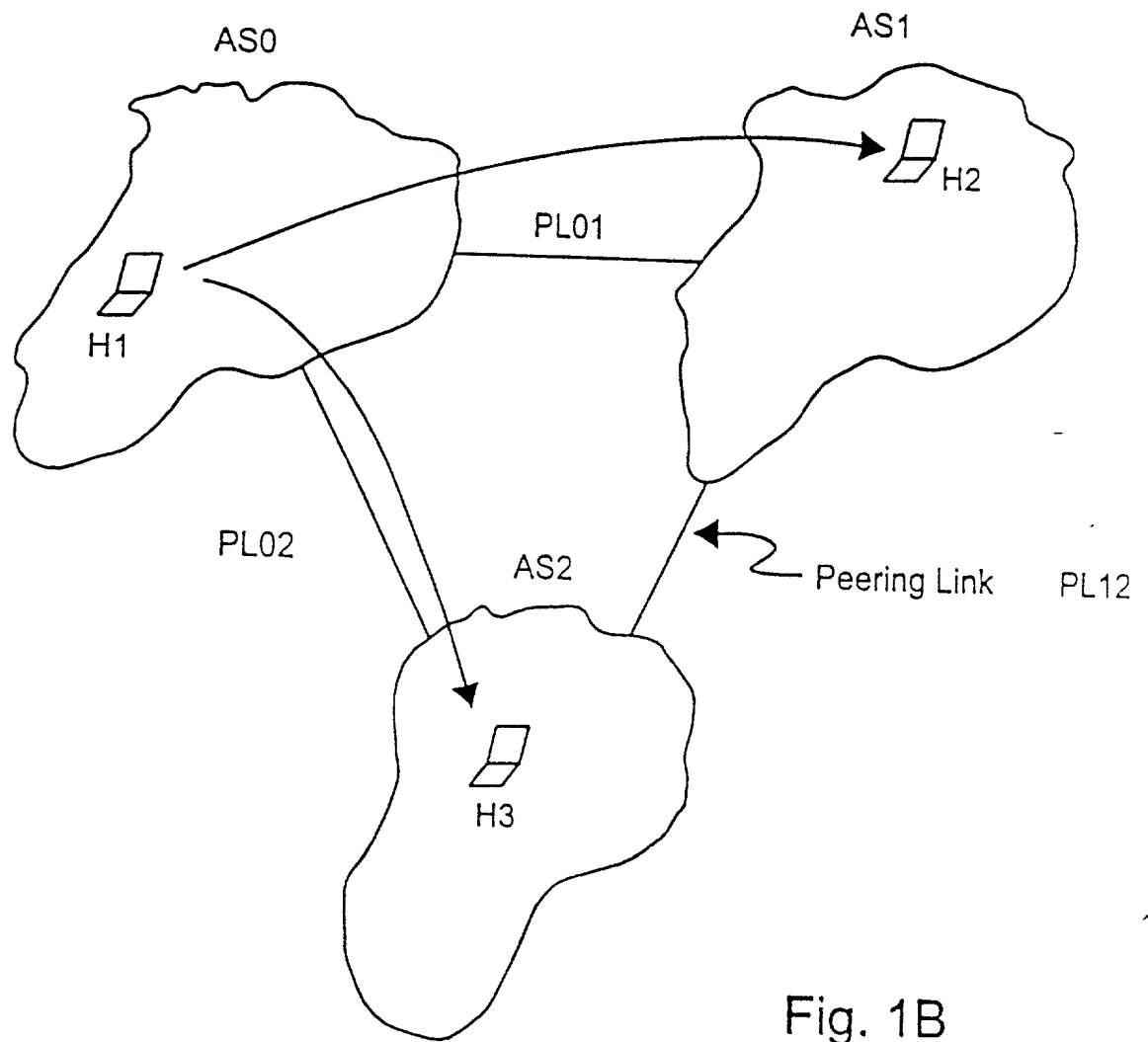


Fig. 1A





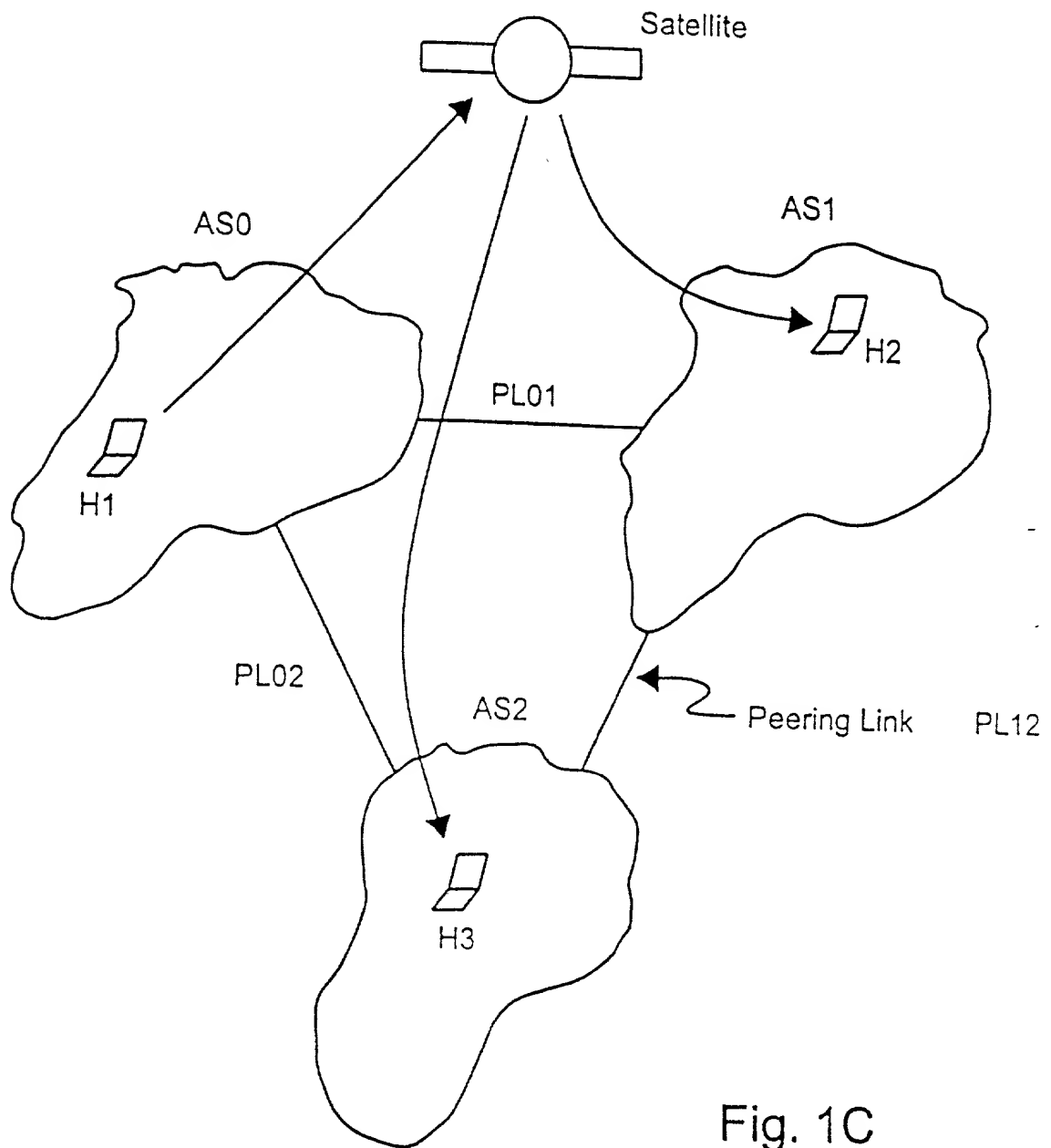


Fig. 1C

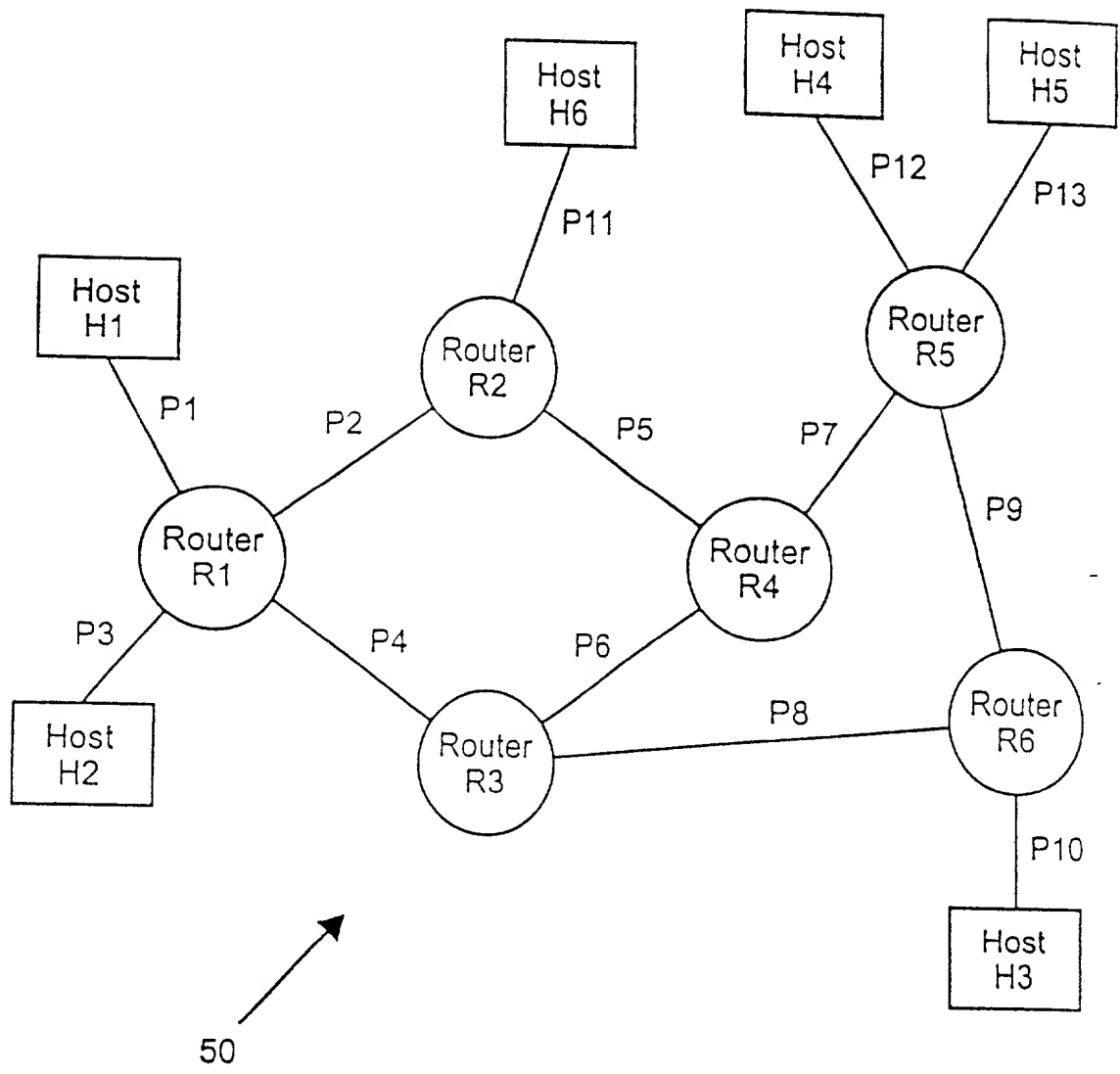


Fig. 1D

40157

Fig. 2

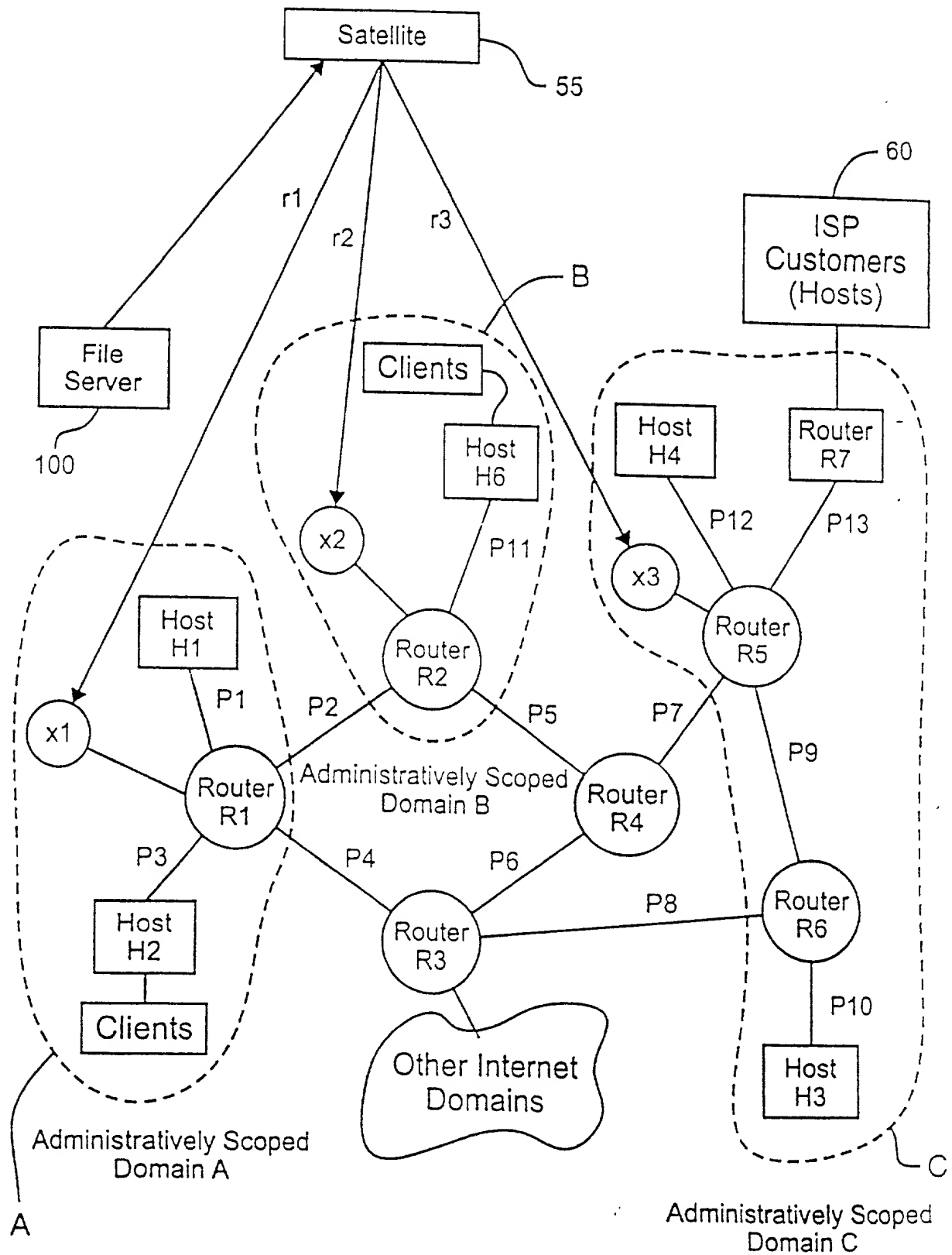
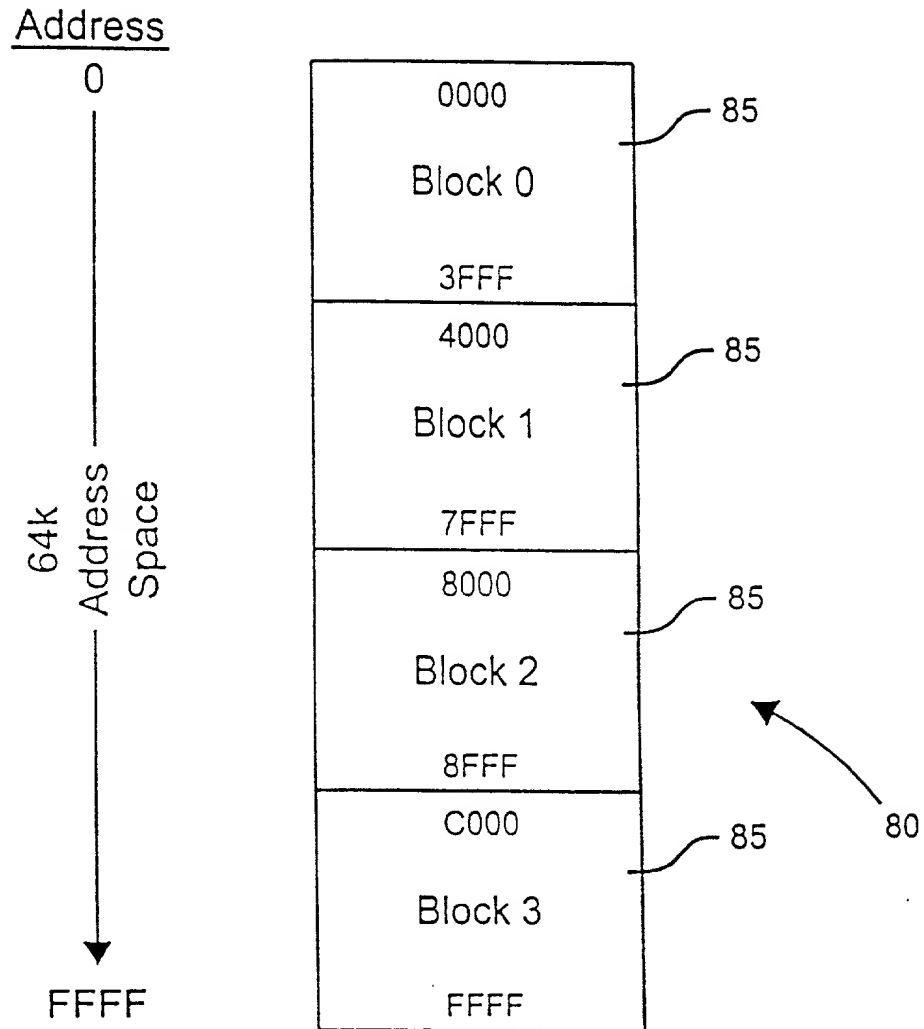


Fig. 3



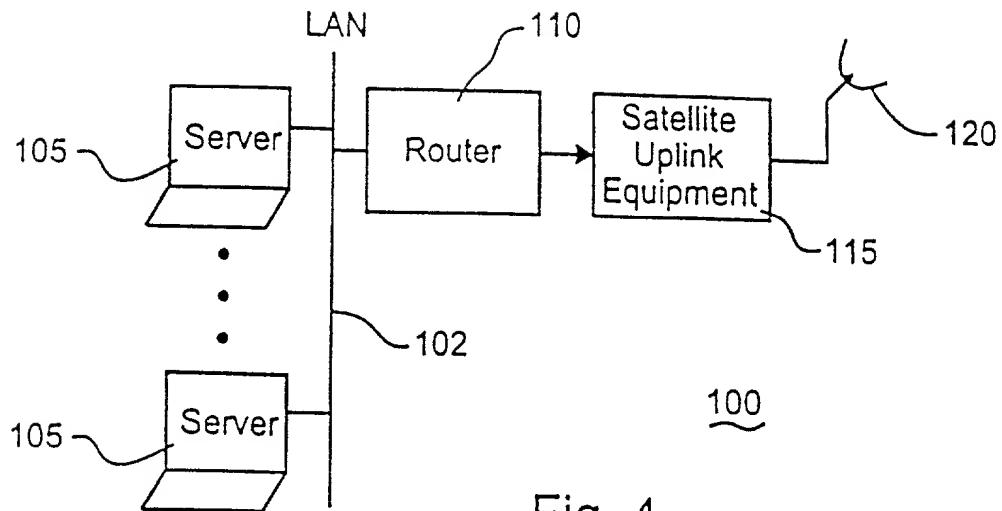


Fig. 4

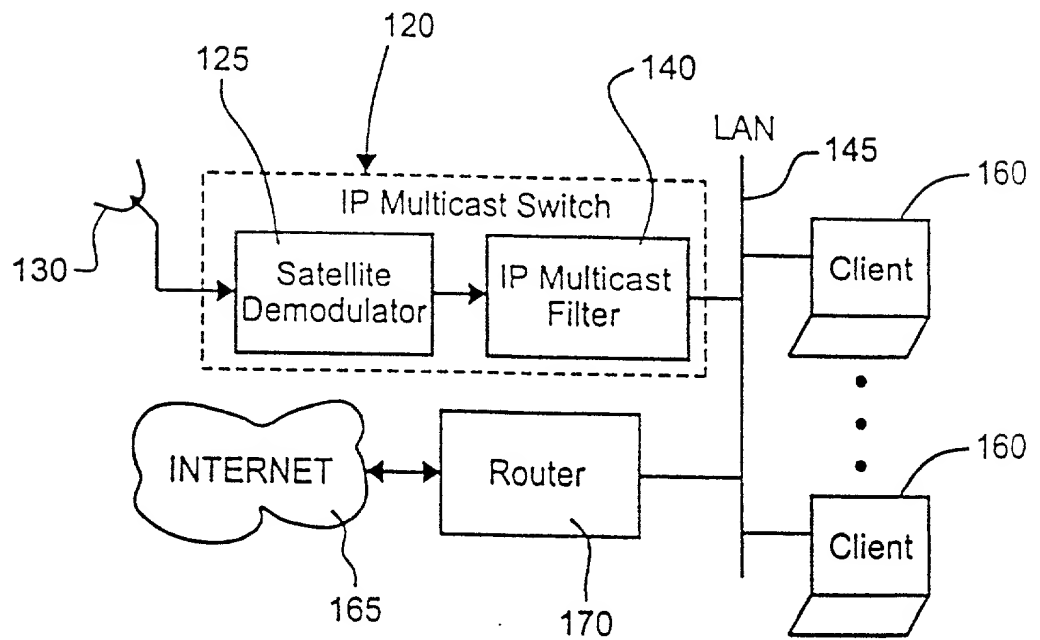
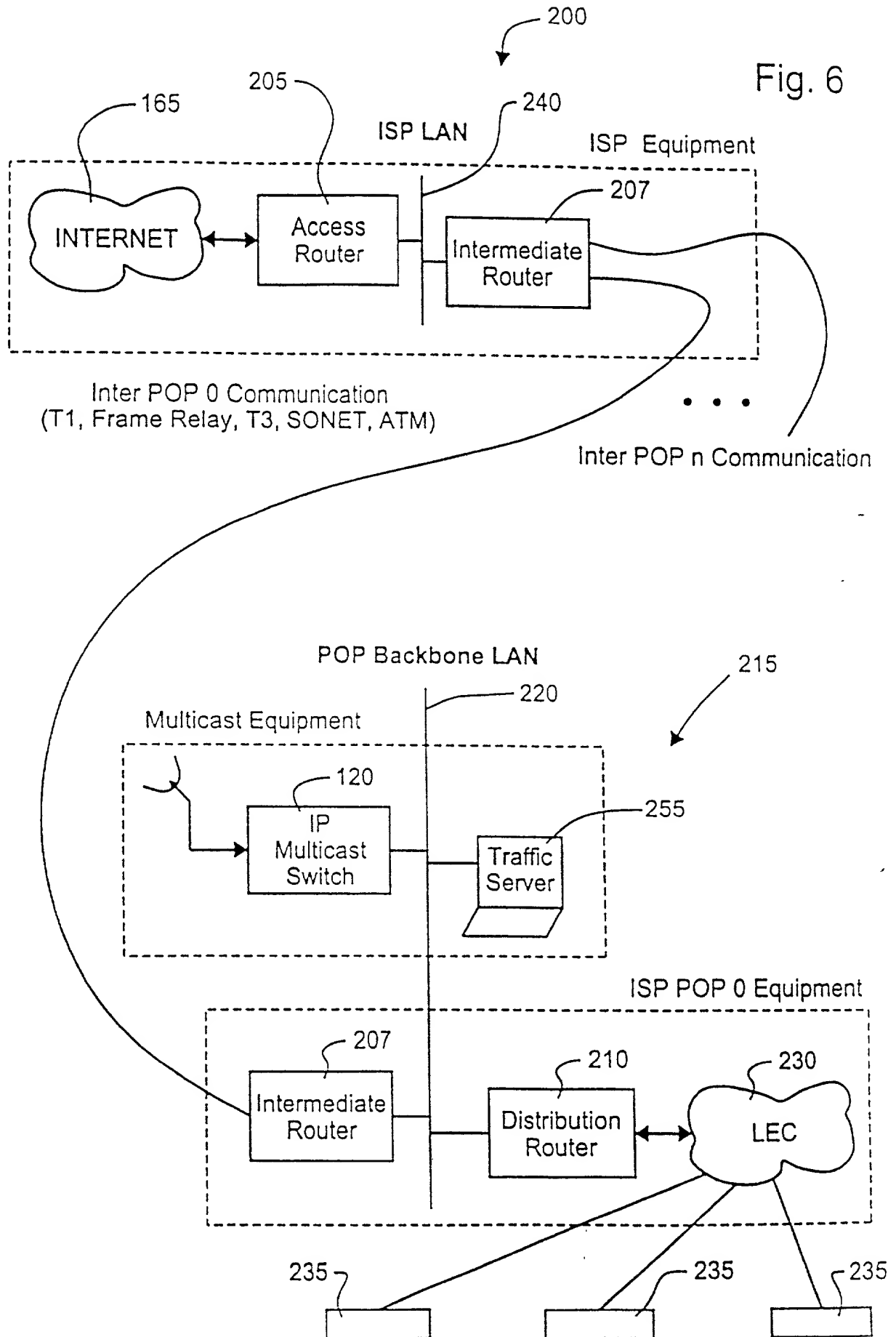


Fig. 5

Fig. 6



80857

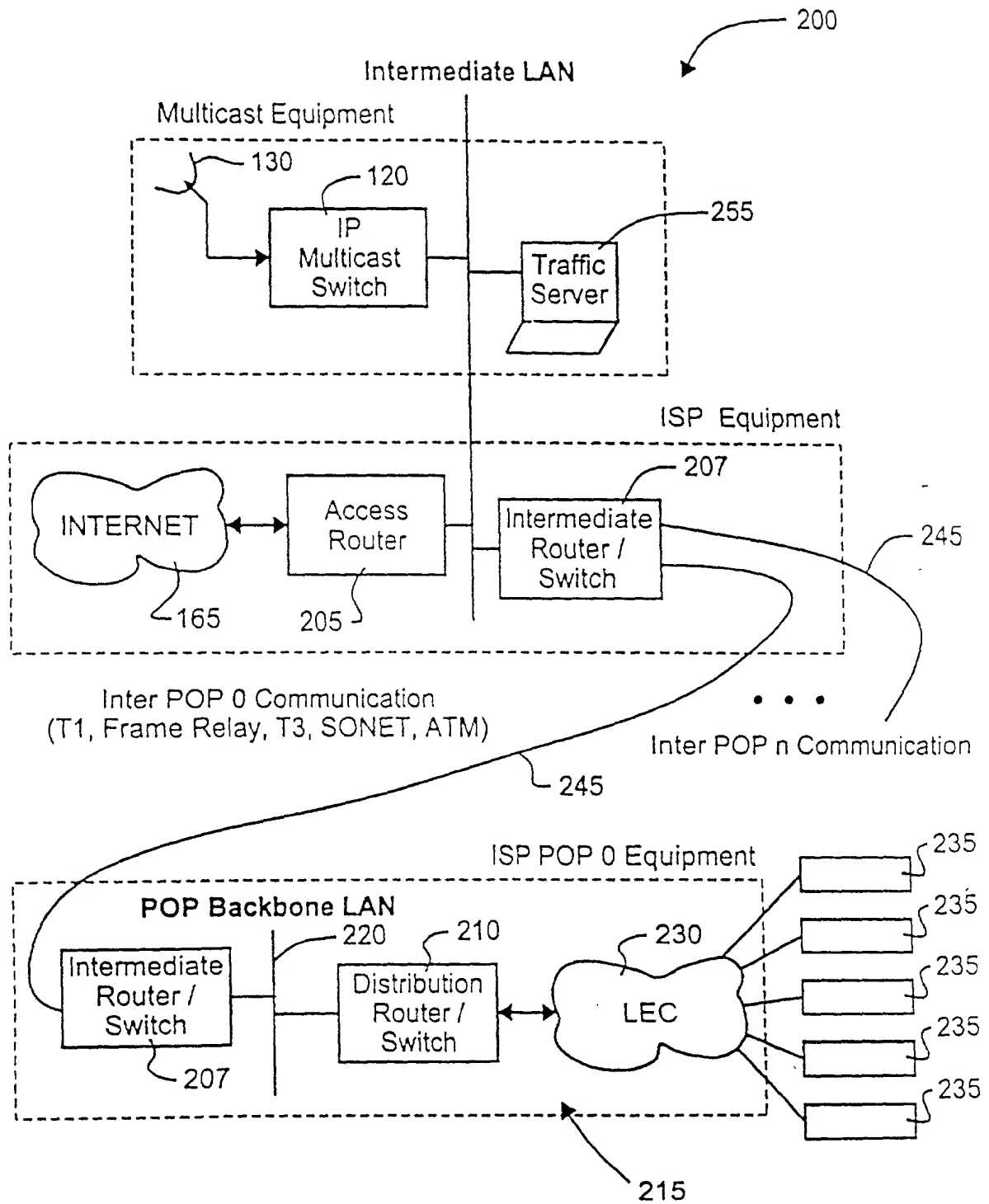
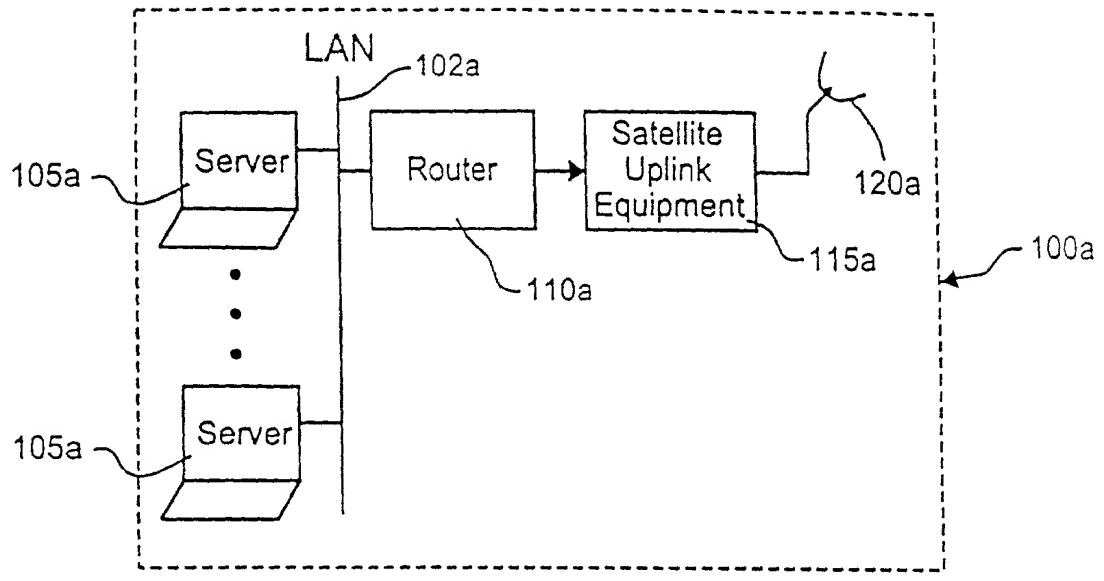
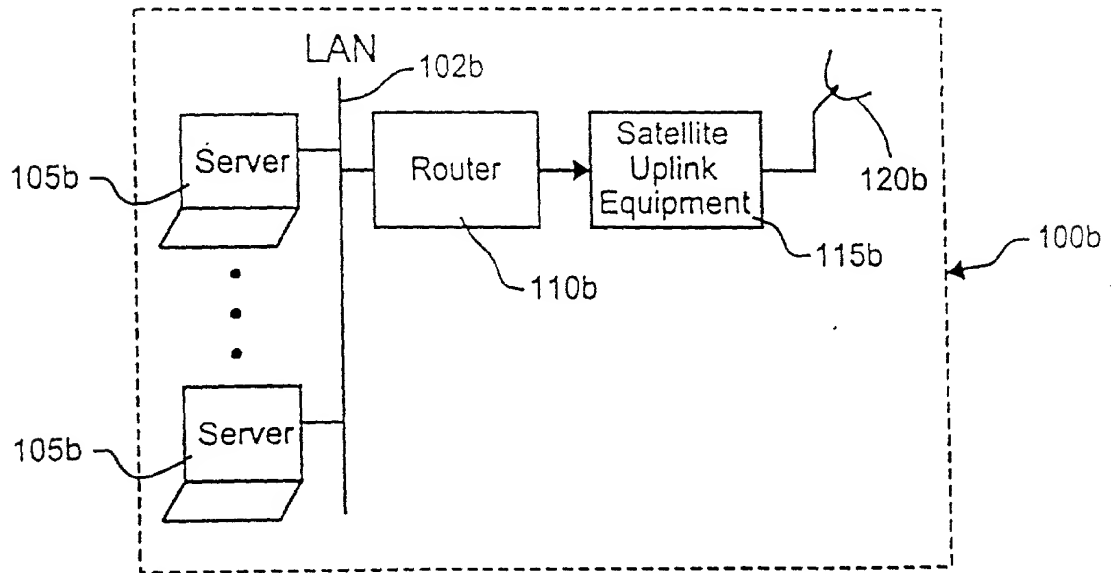


Fig. 7



Transponder 1



Transponder 2

Fig. 8a

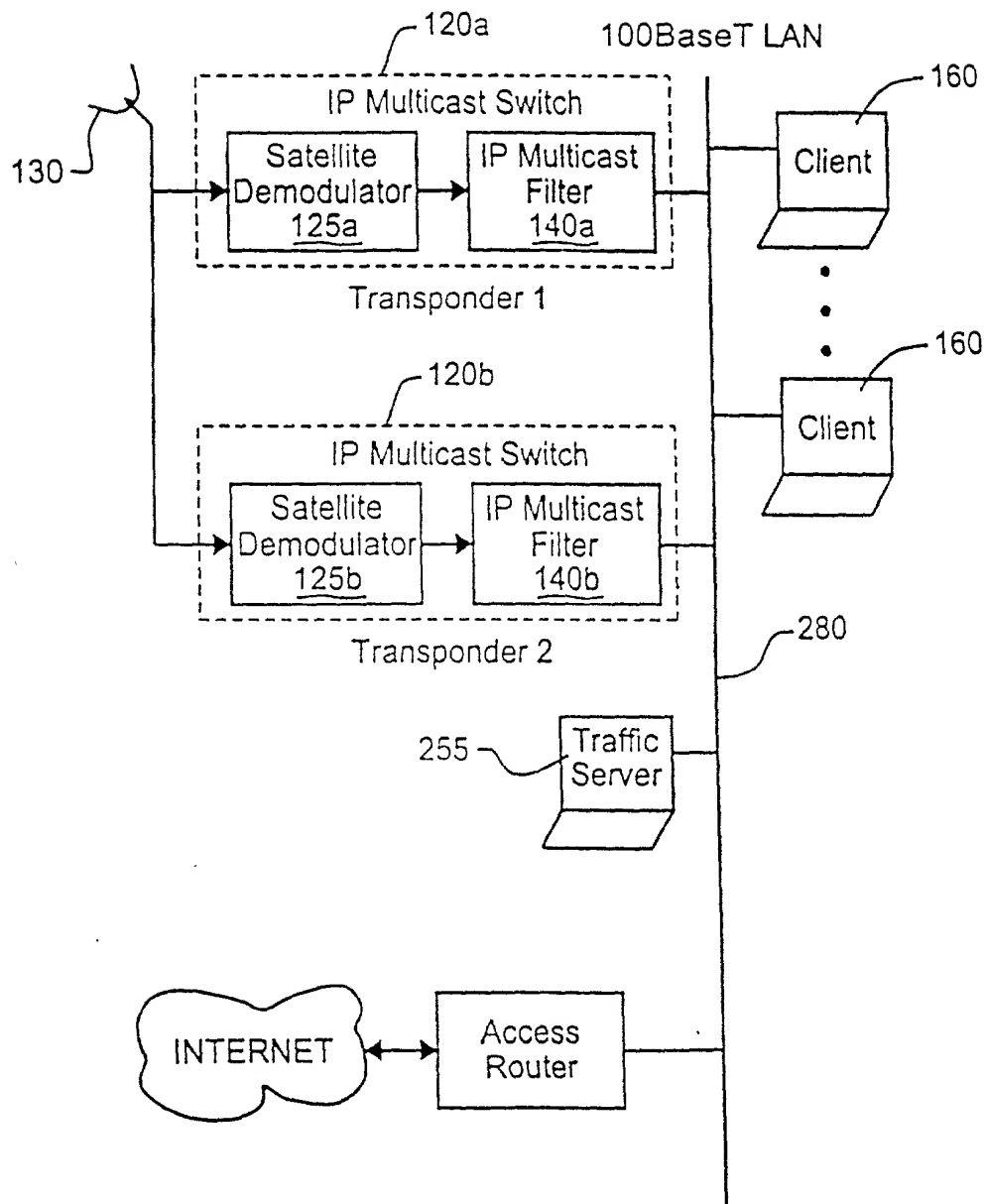


Fig. 8b

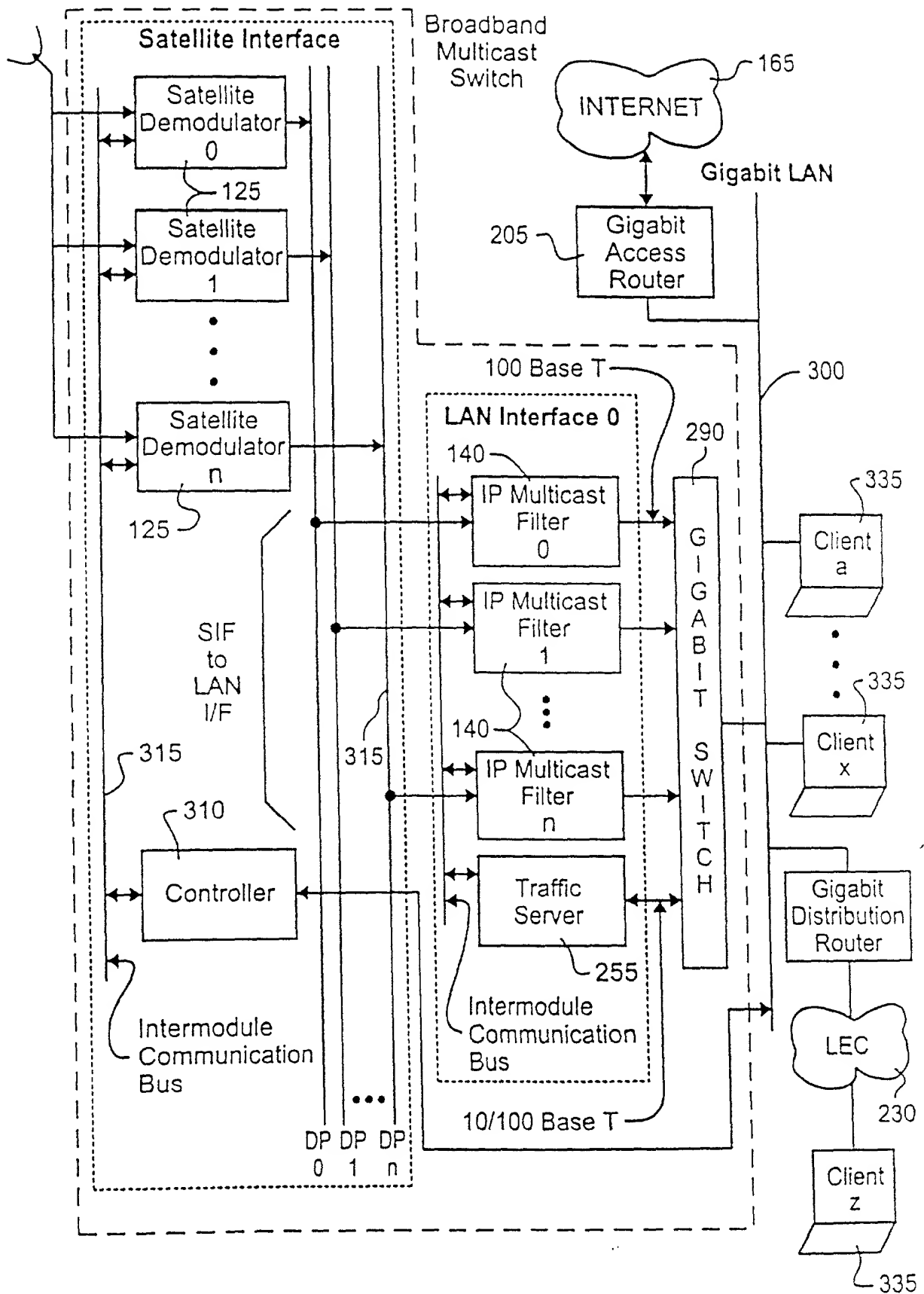


Fig. 9

12457

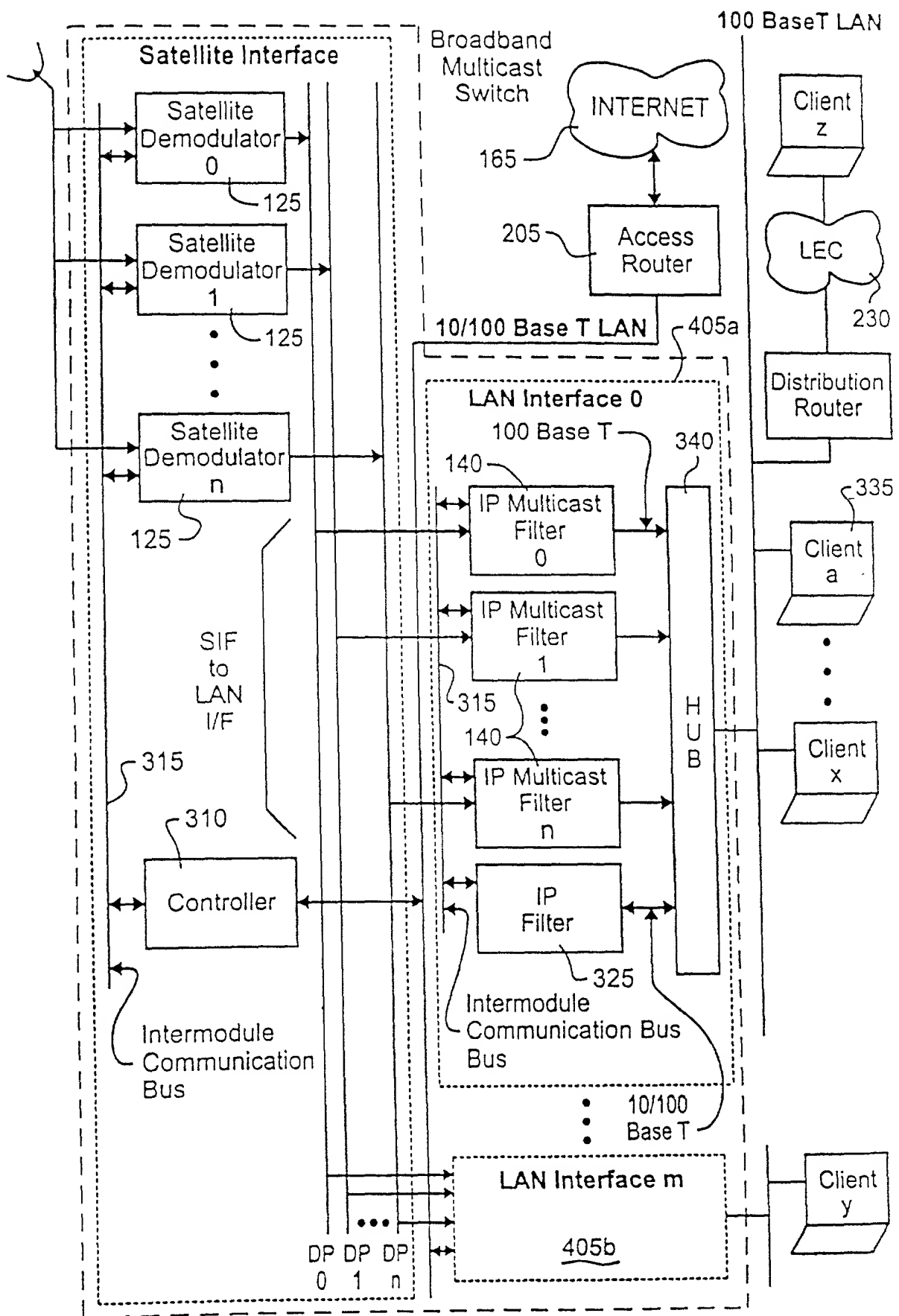


Fig. 10

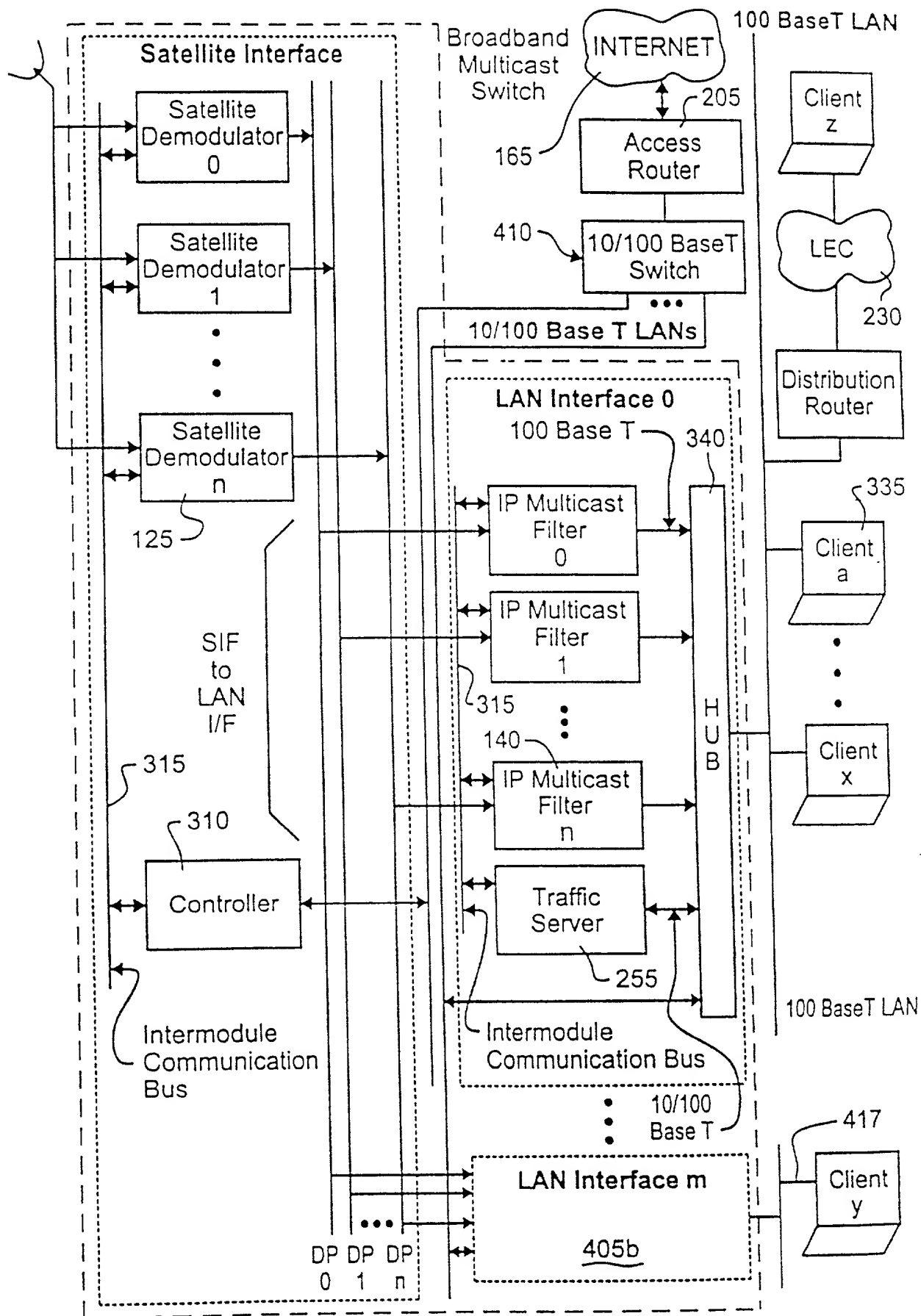
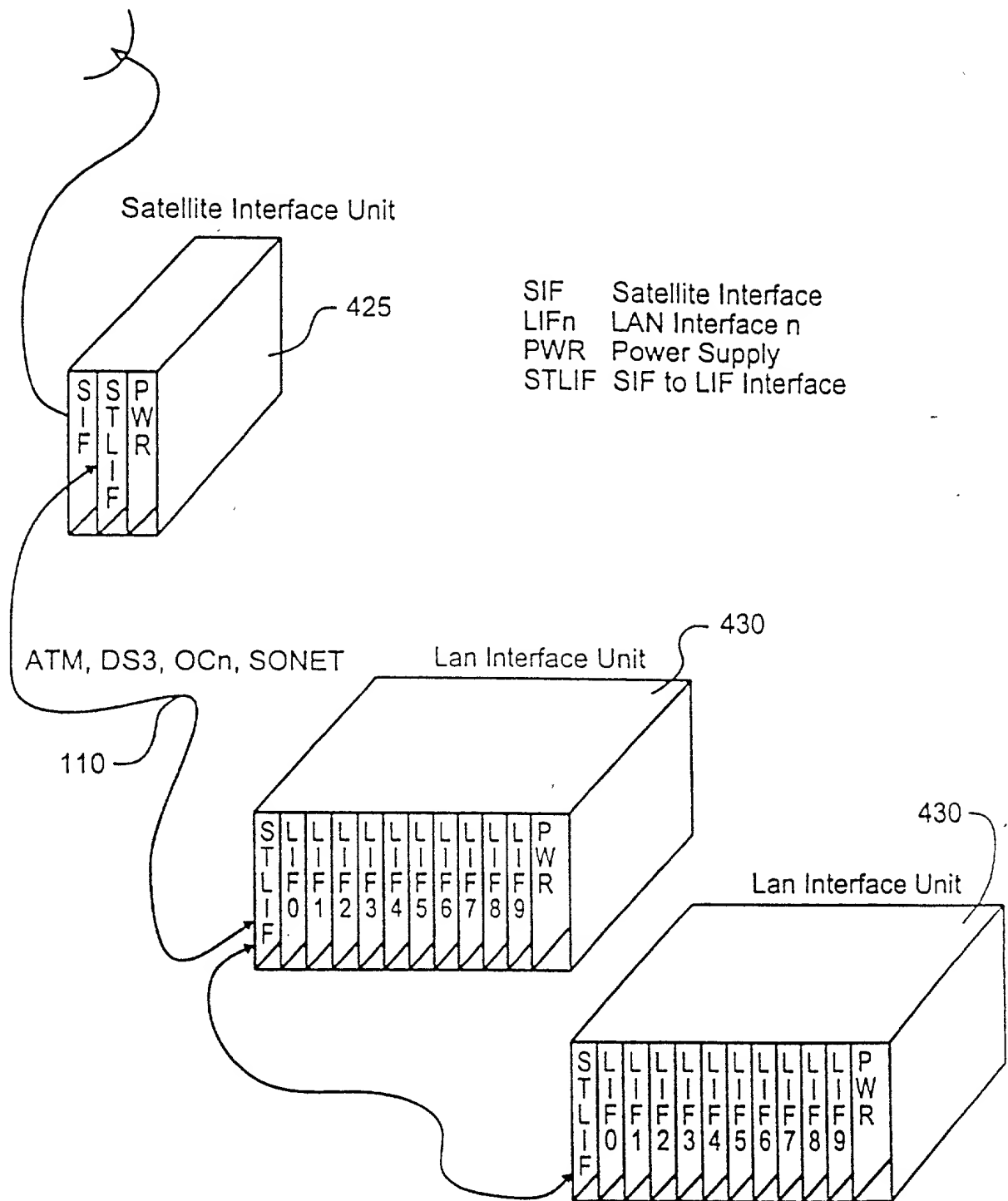


Fig. 11

14857

Fig. 12



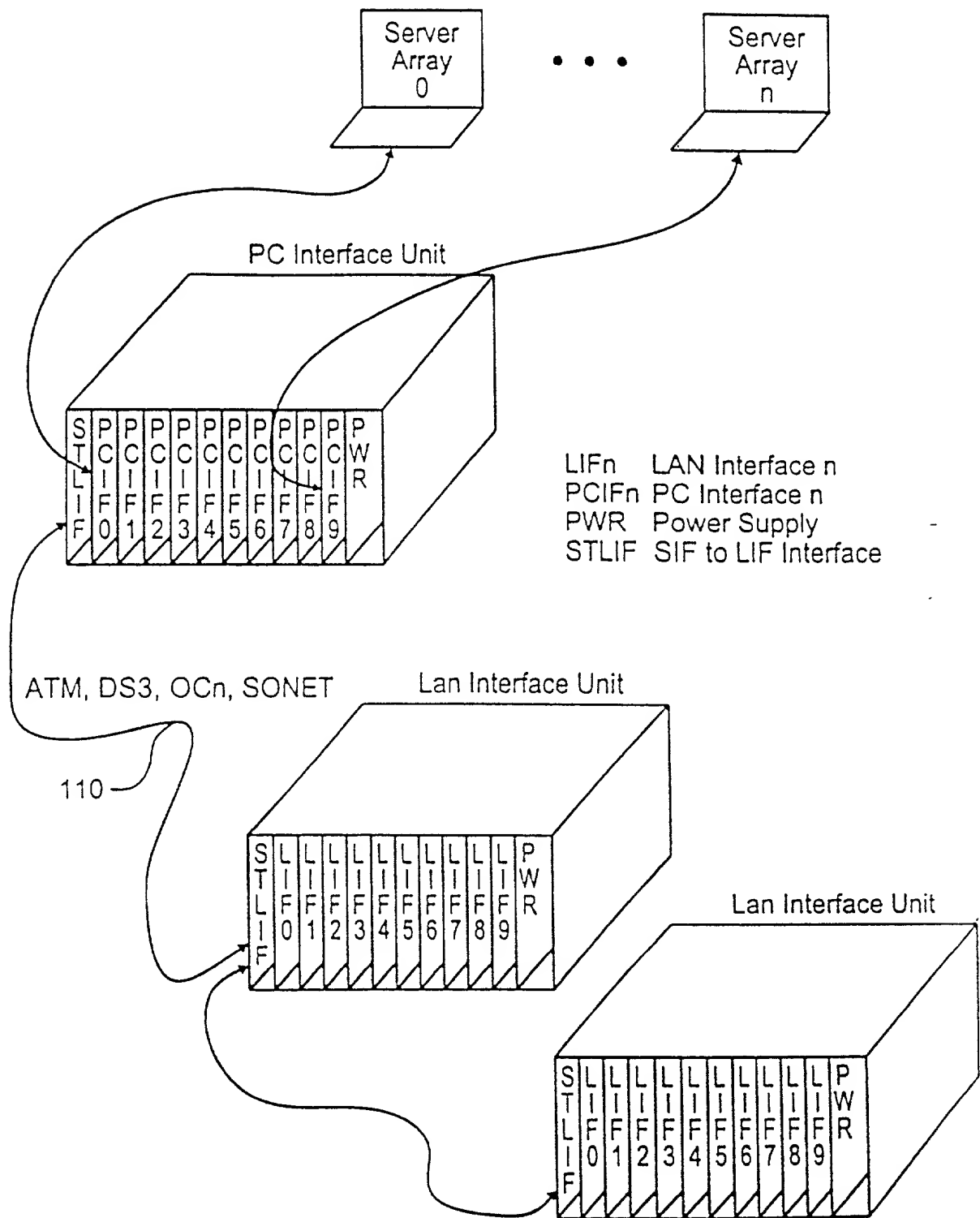


Fig. 13

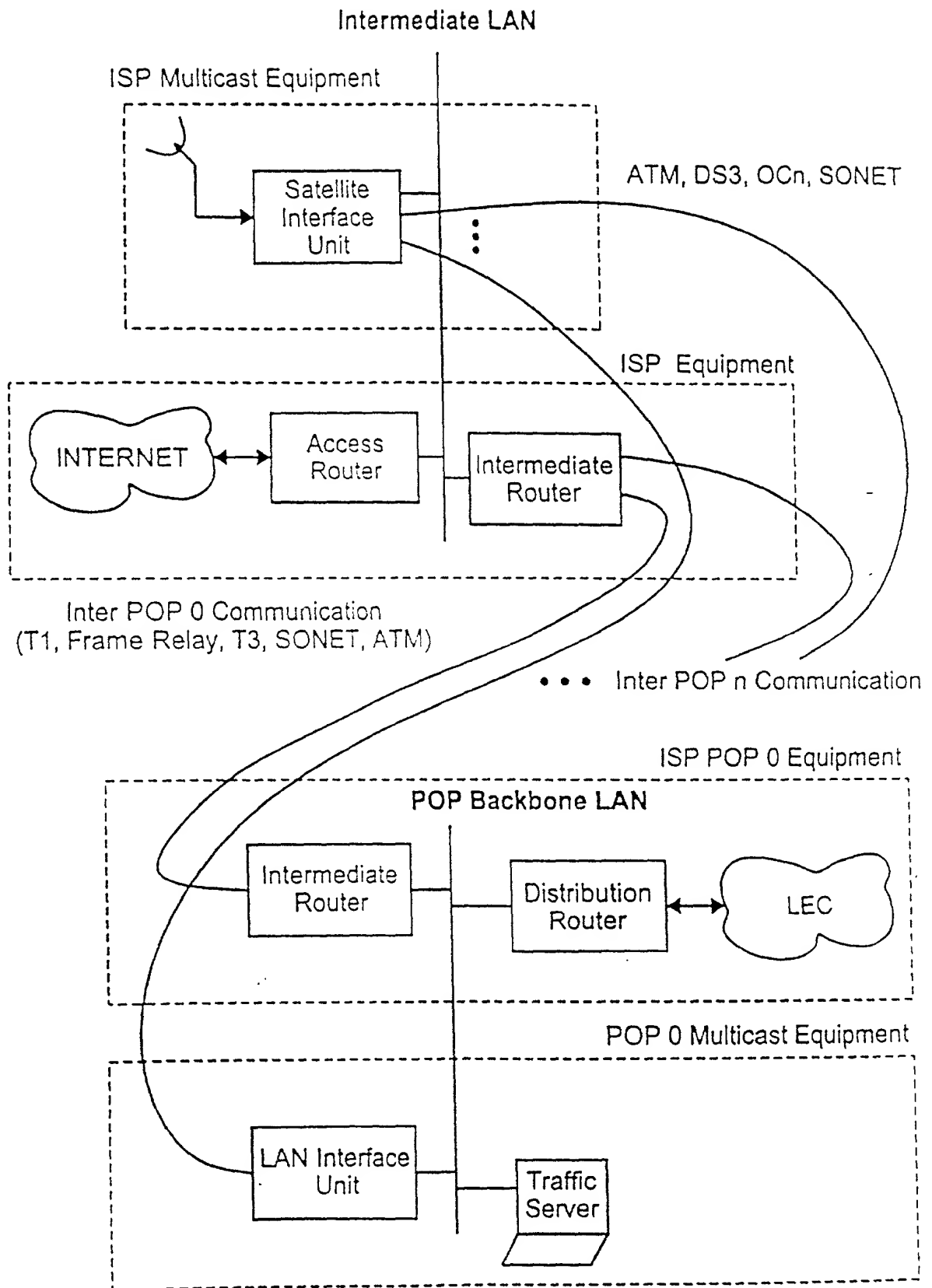


Fig. 14A

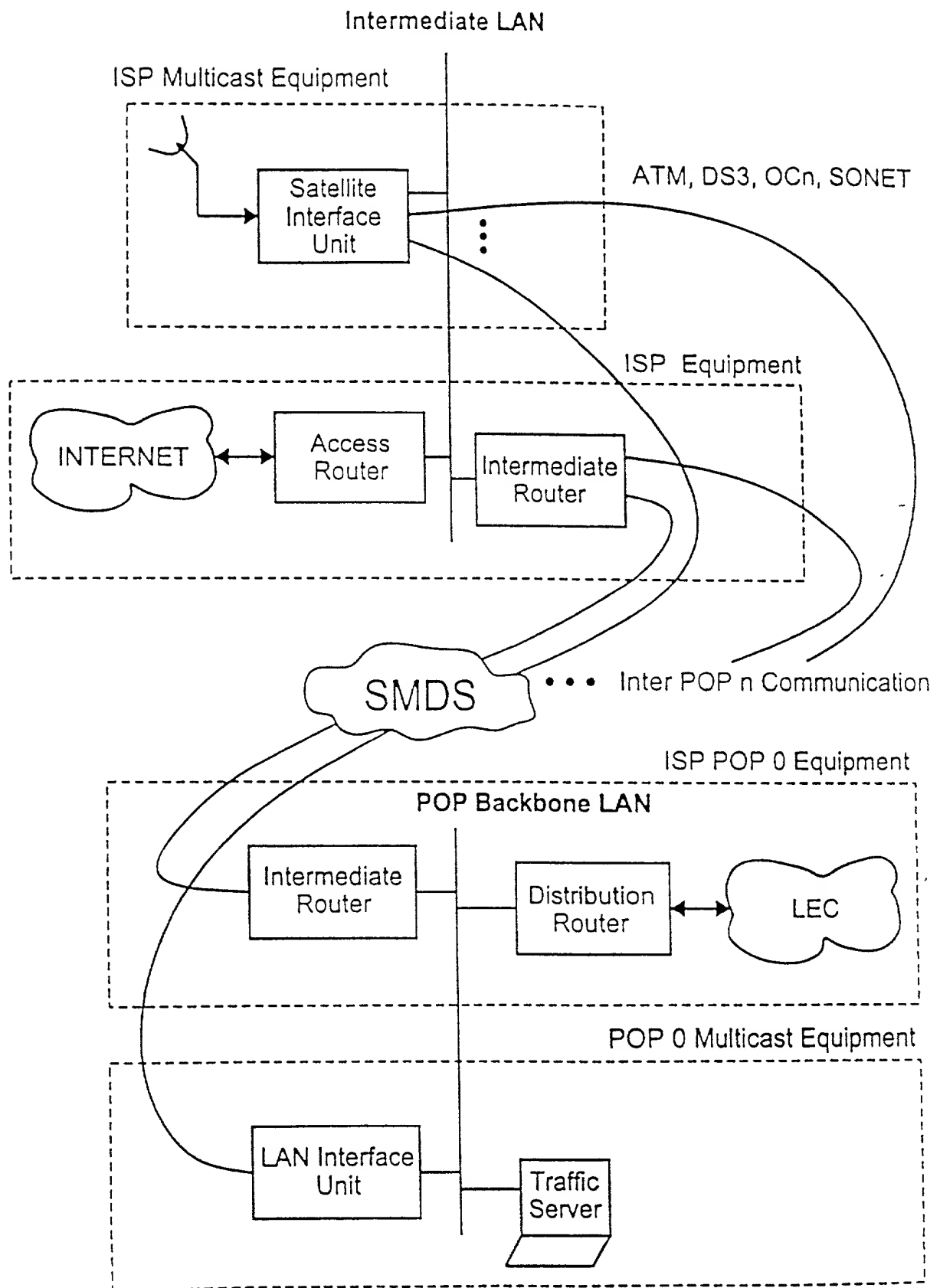


Fig. 14B

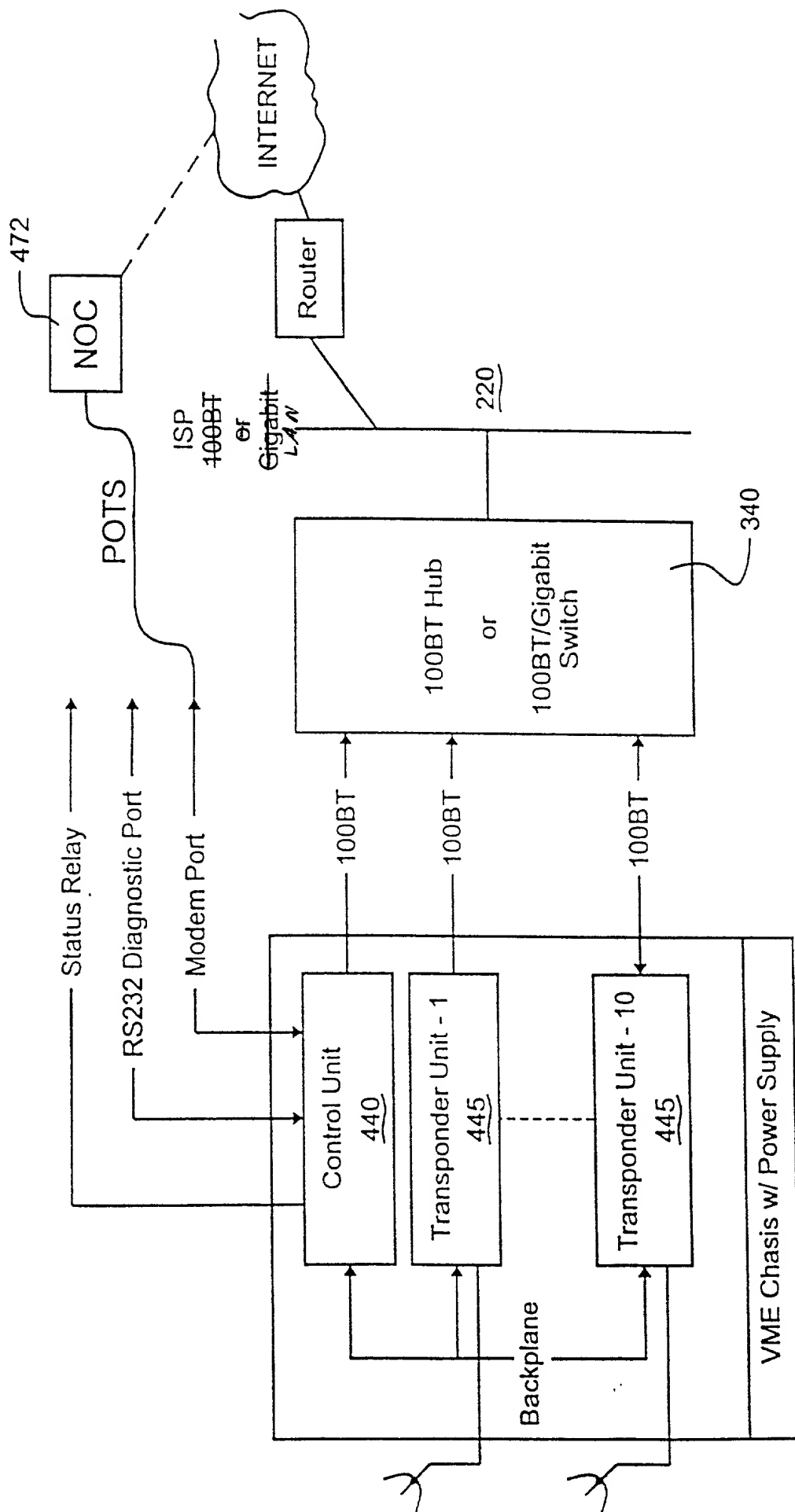
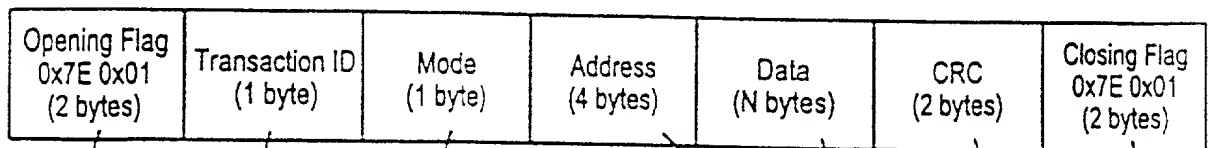
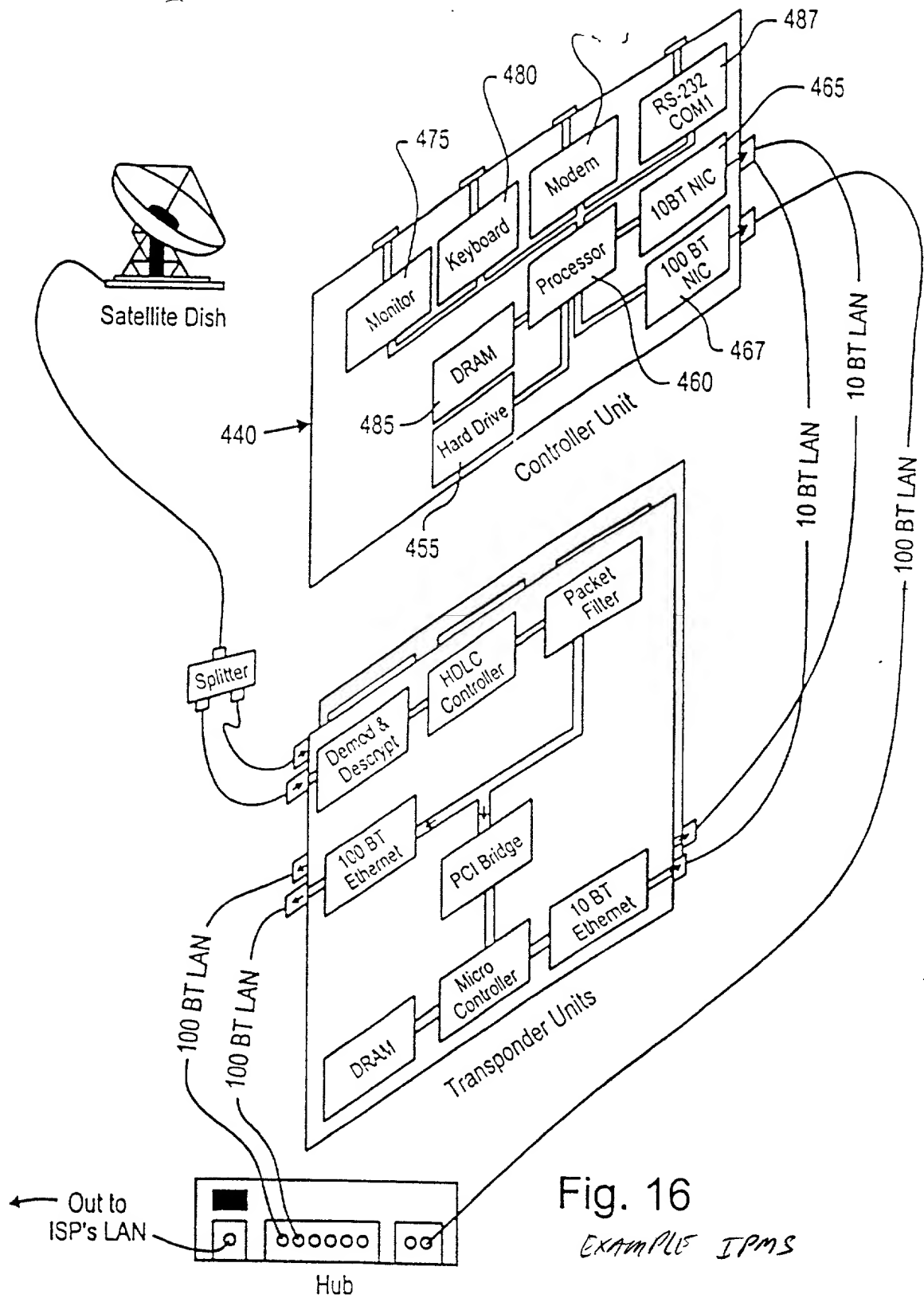


Fig. 15

Example 1 PMS



500 505 515 520 525 530 510
Fig. 17

2108-5

FIG. 18 is a block diagram of a transponder unit, in accordance with the present invention.

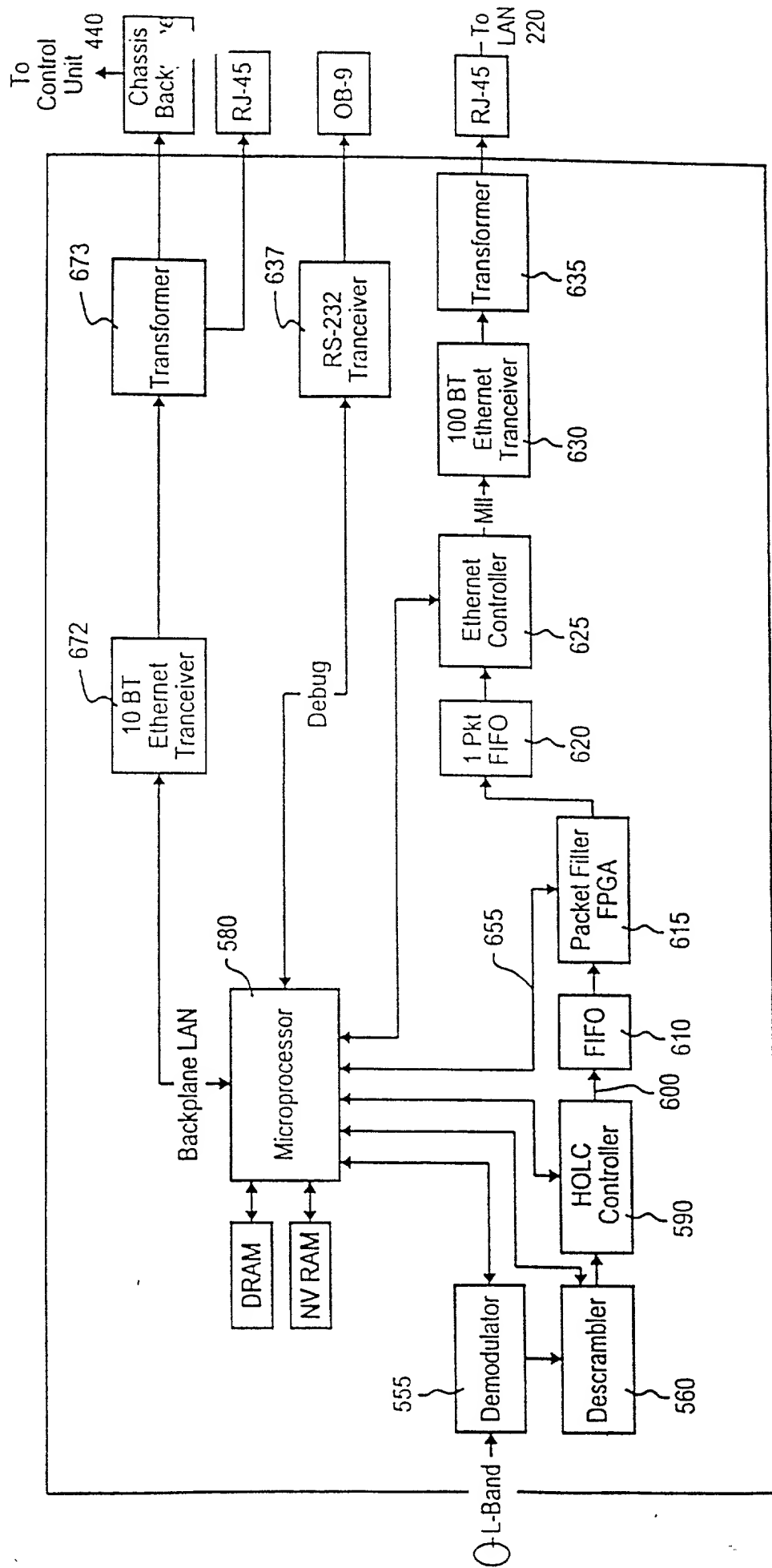


Fig. 18
Transponder unit

2/8/5

Fig. 19 is a block diagram of a system for processing data received from a source.

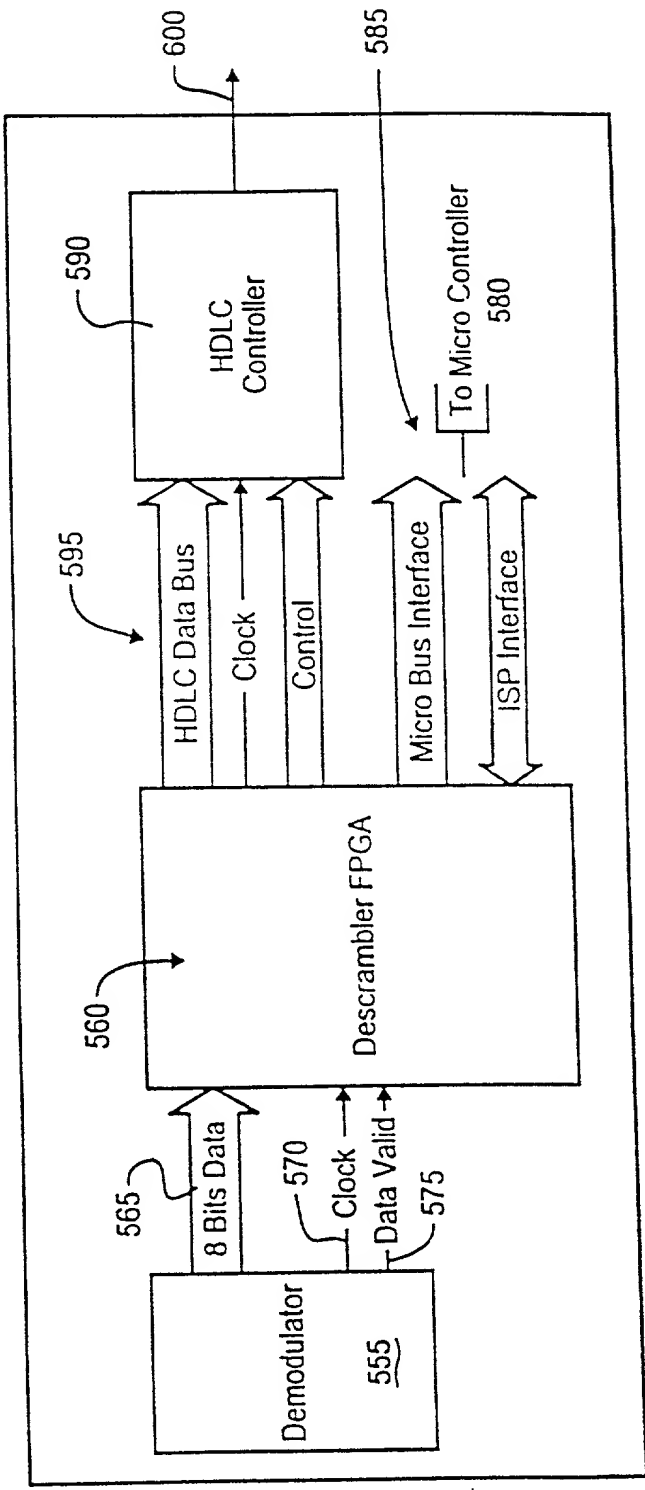


Fig. 19

Copyright 1999 by Intel Corporation

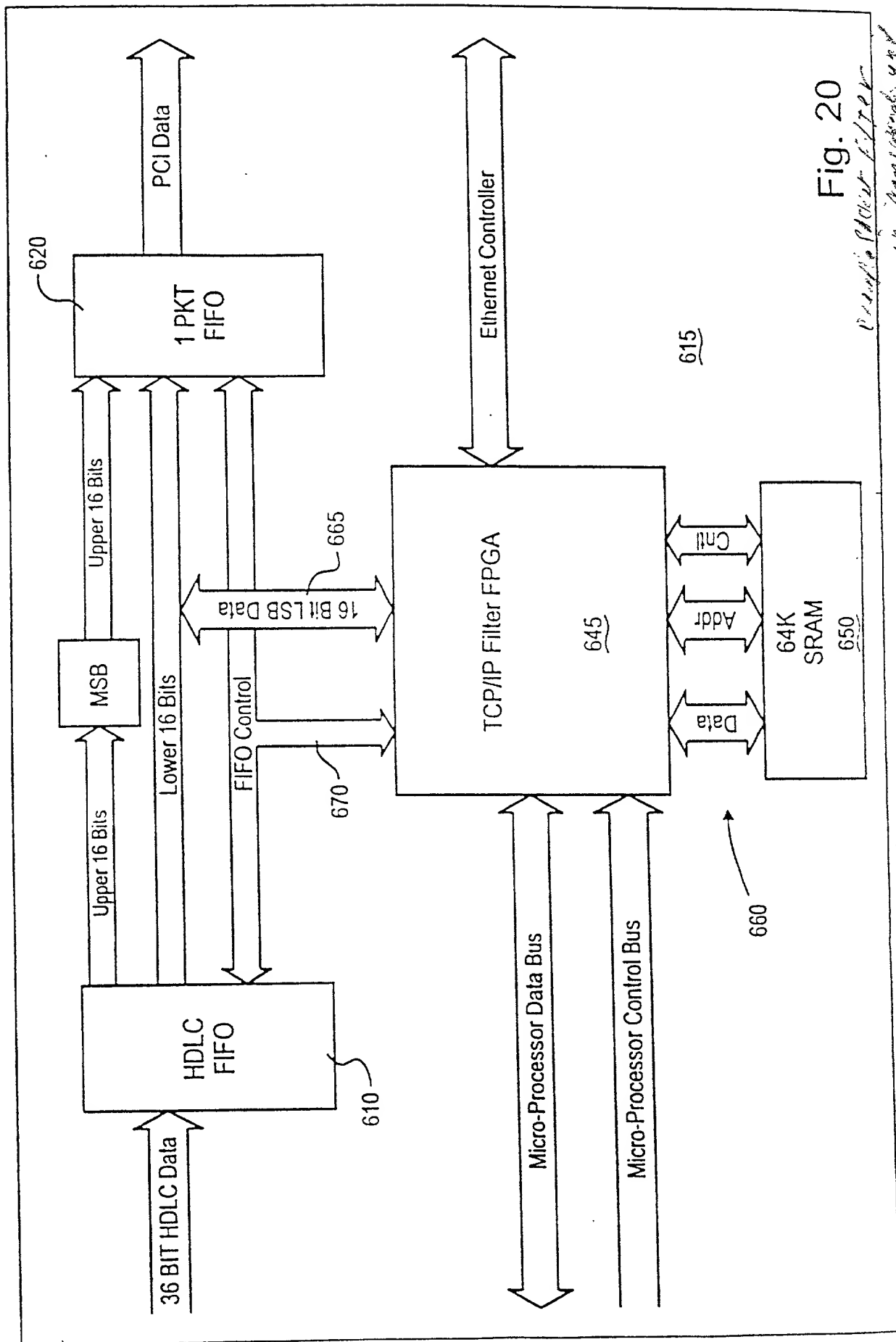


Fig. 20

Example Packet Filter in Transponder 4x4

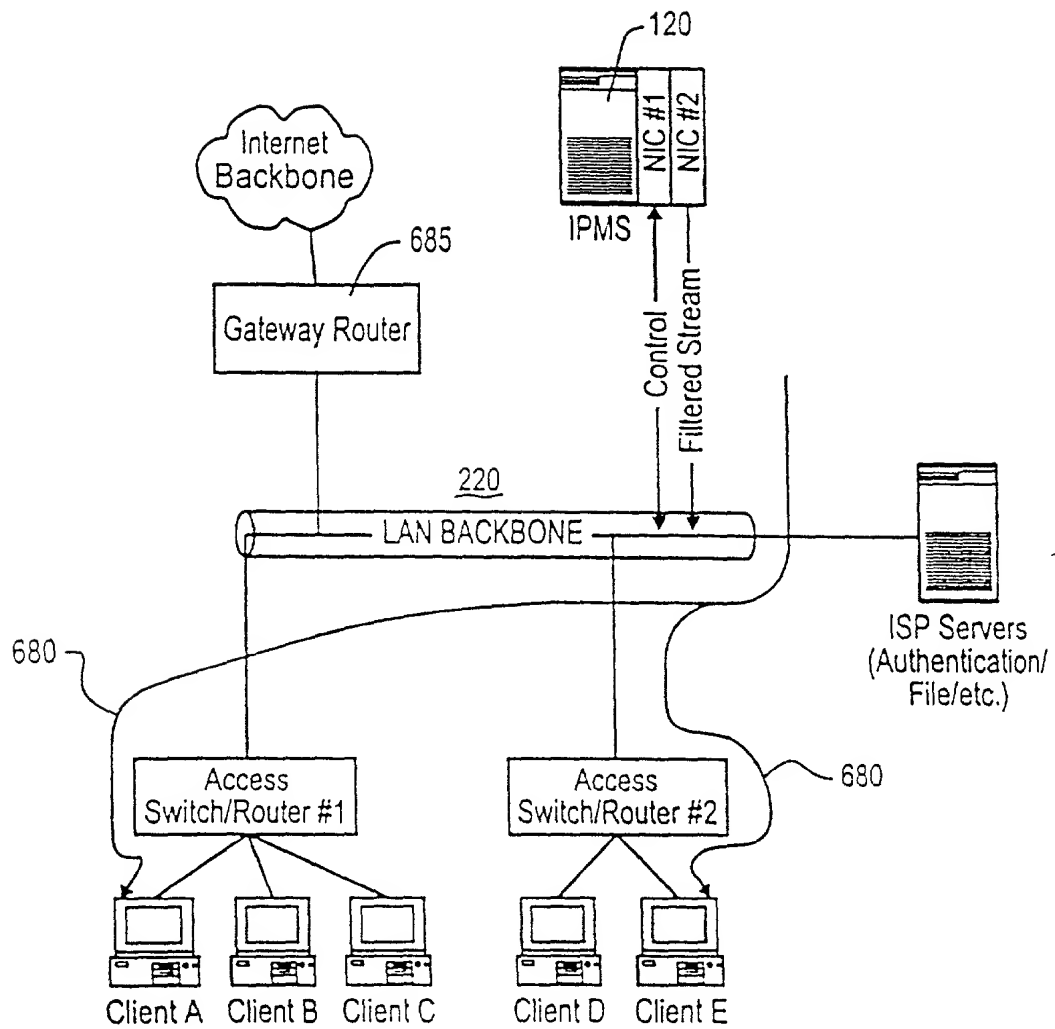


Fig. 21

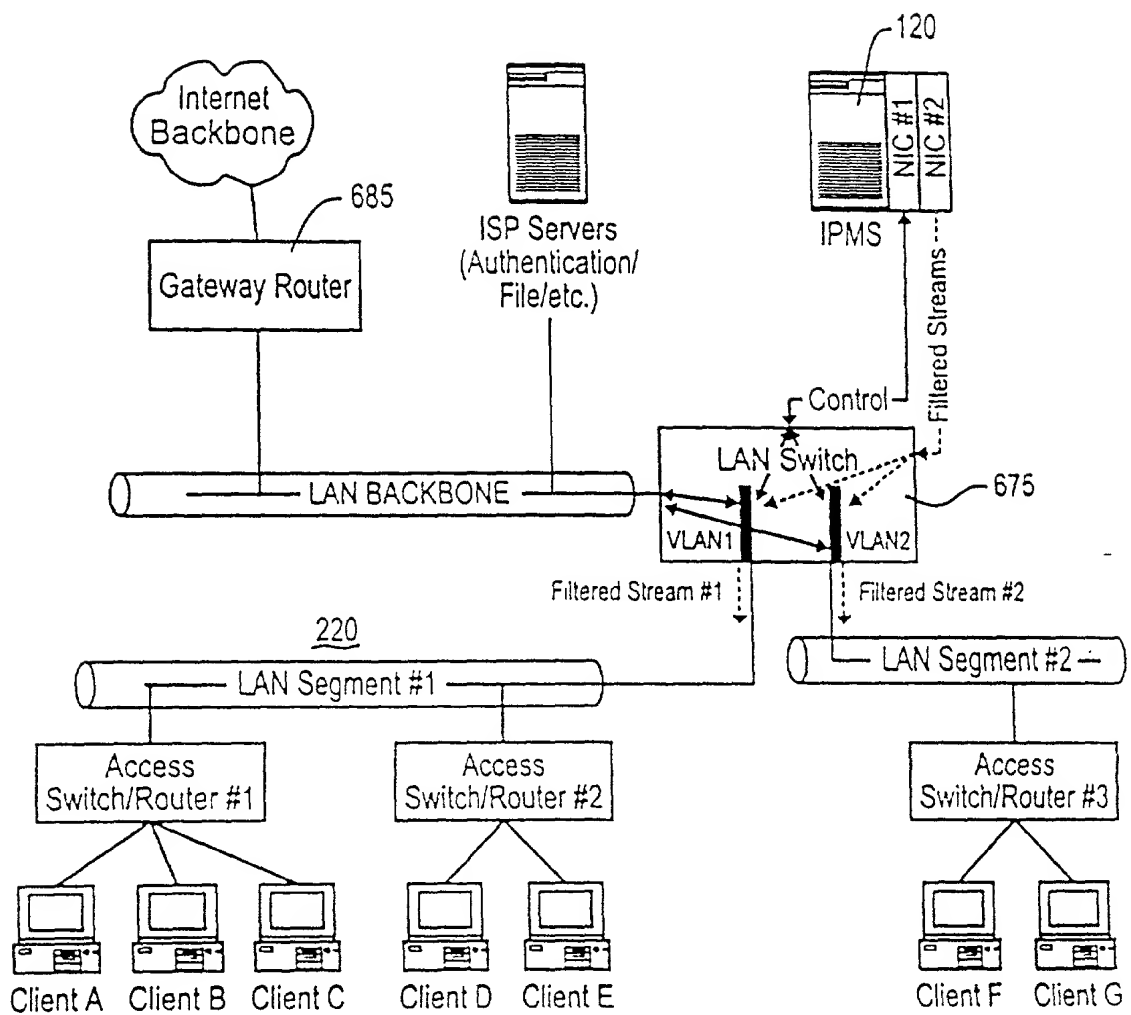


Fig. 22

25 157

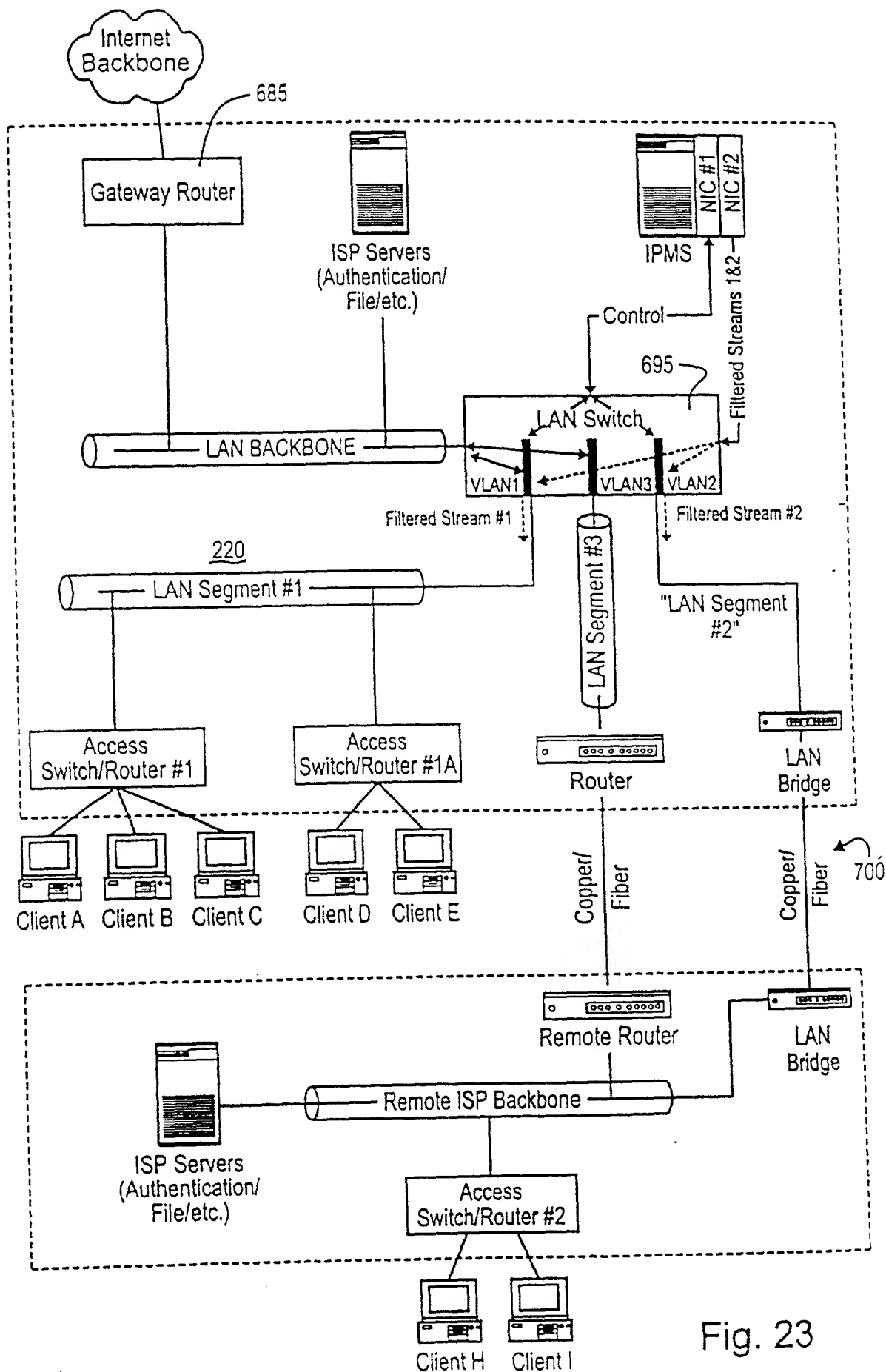


Fig. 23

Handwritten note: 2/10/02 = ?

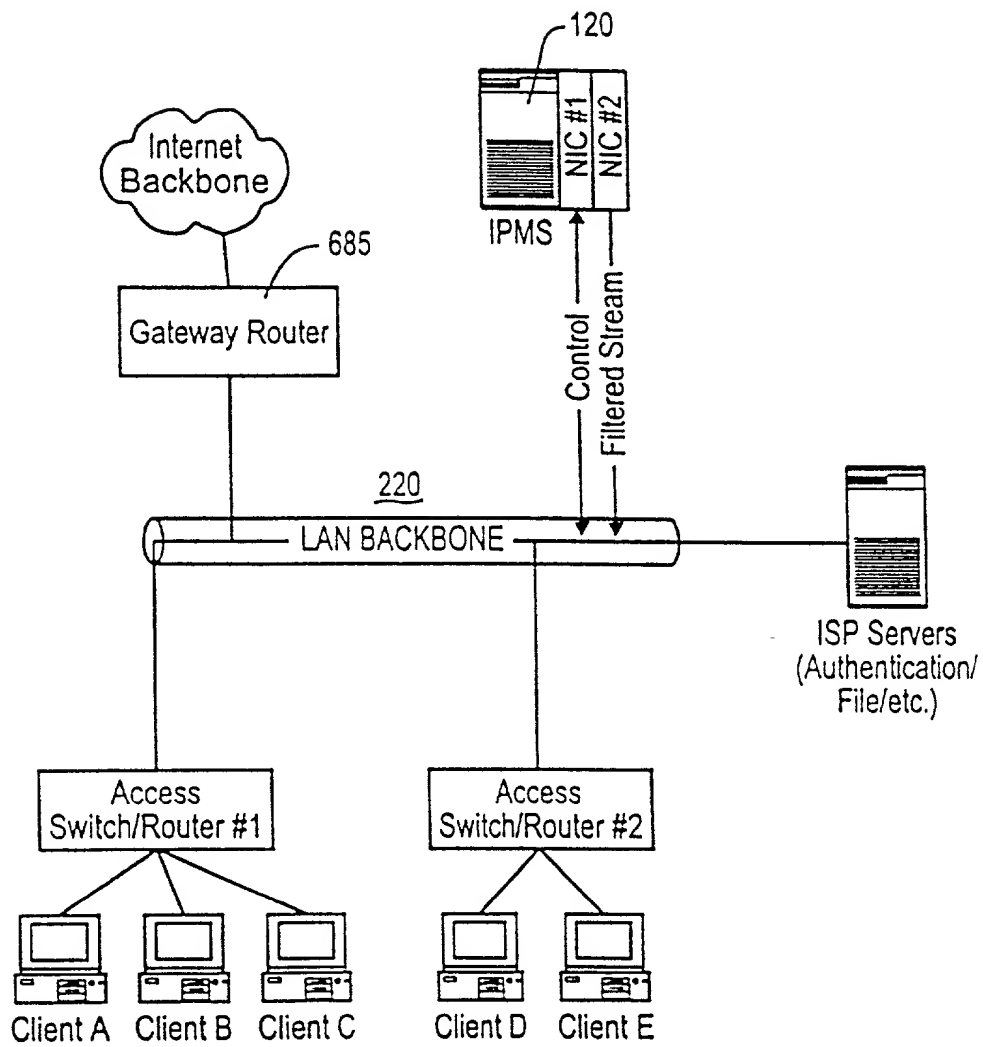


Fig. 24

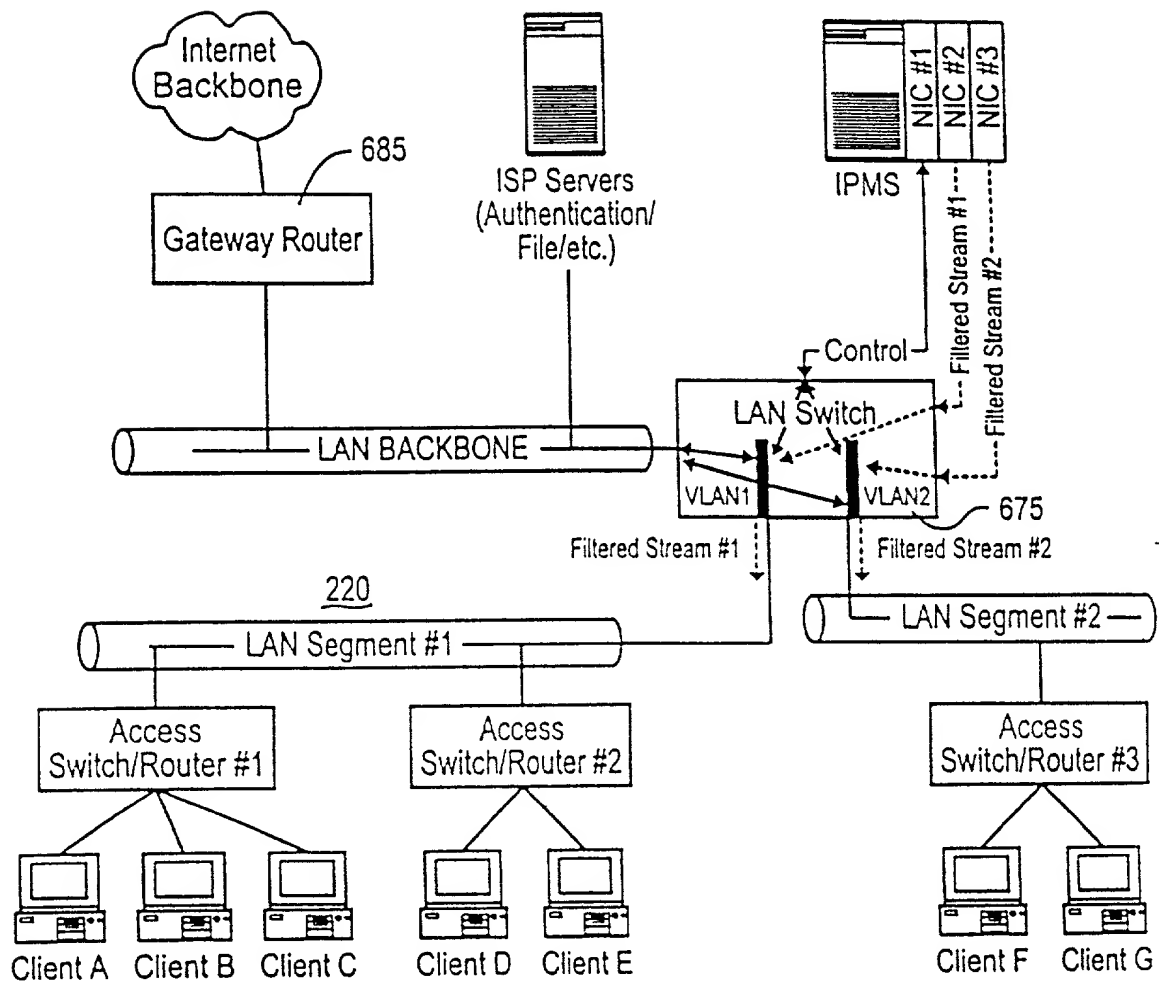


Fig. 25

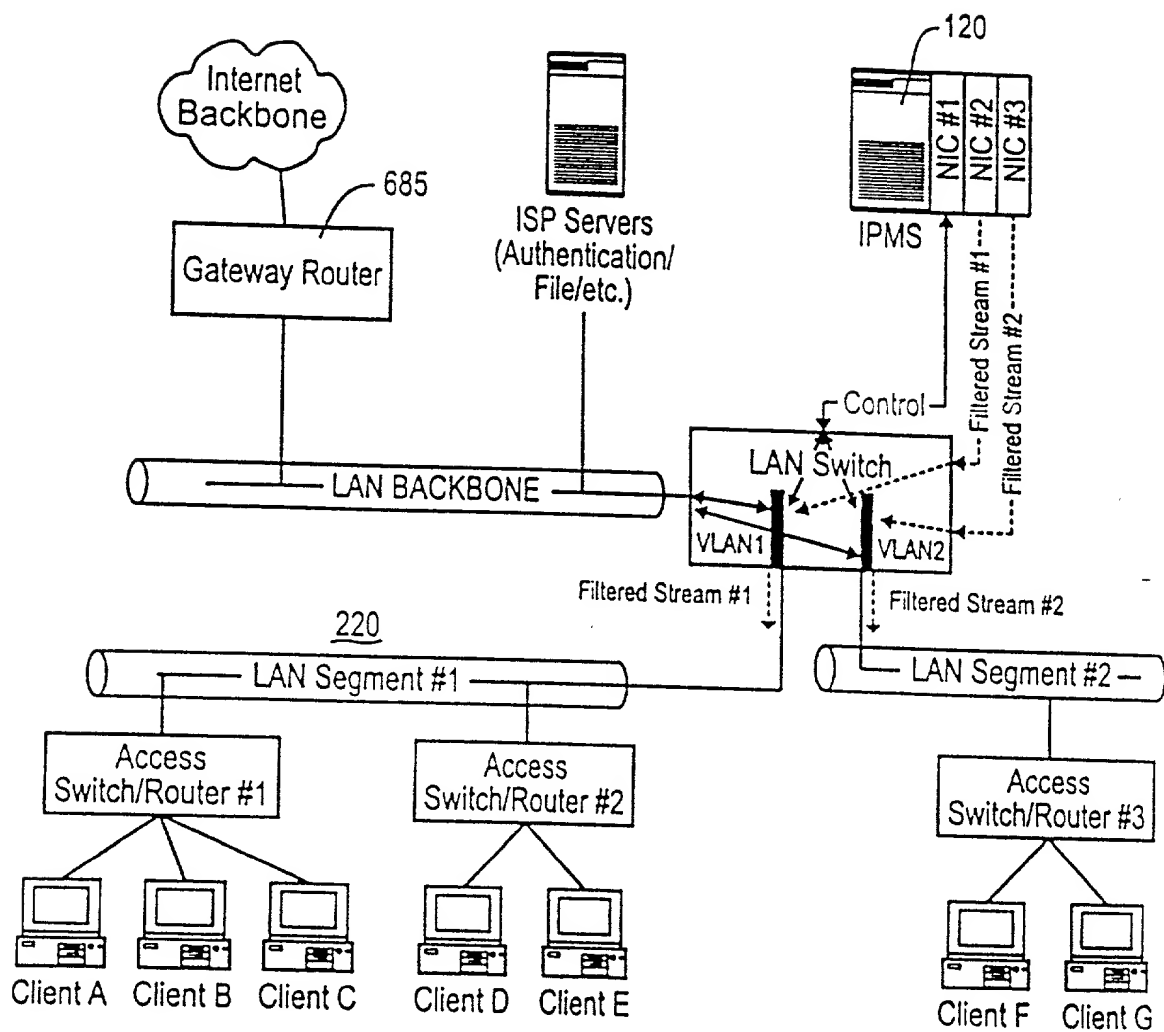


Fig. 26

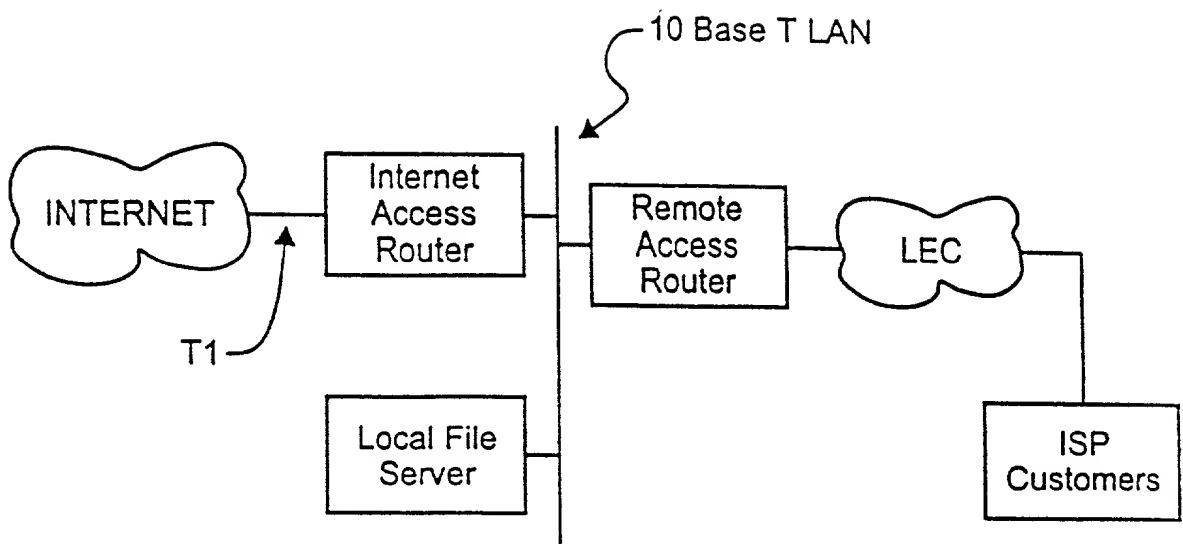


Fig. 27

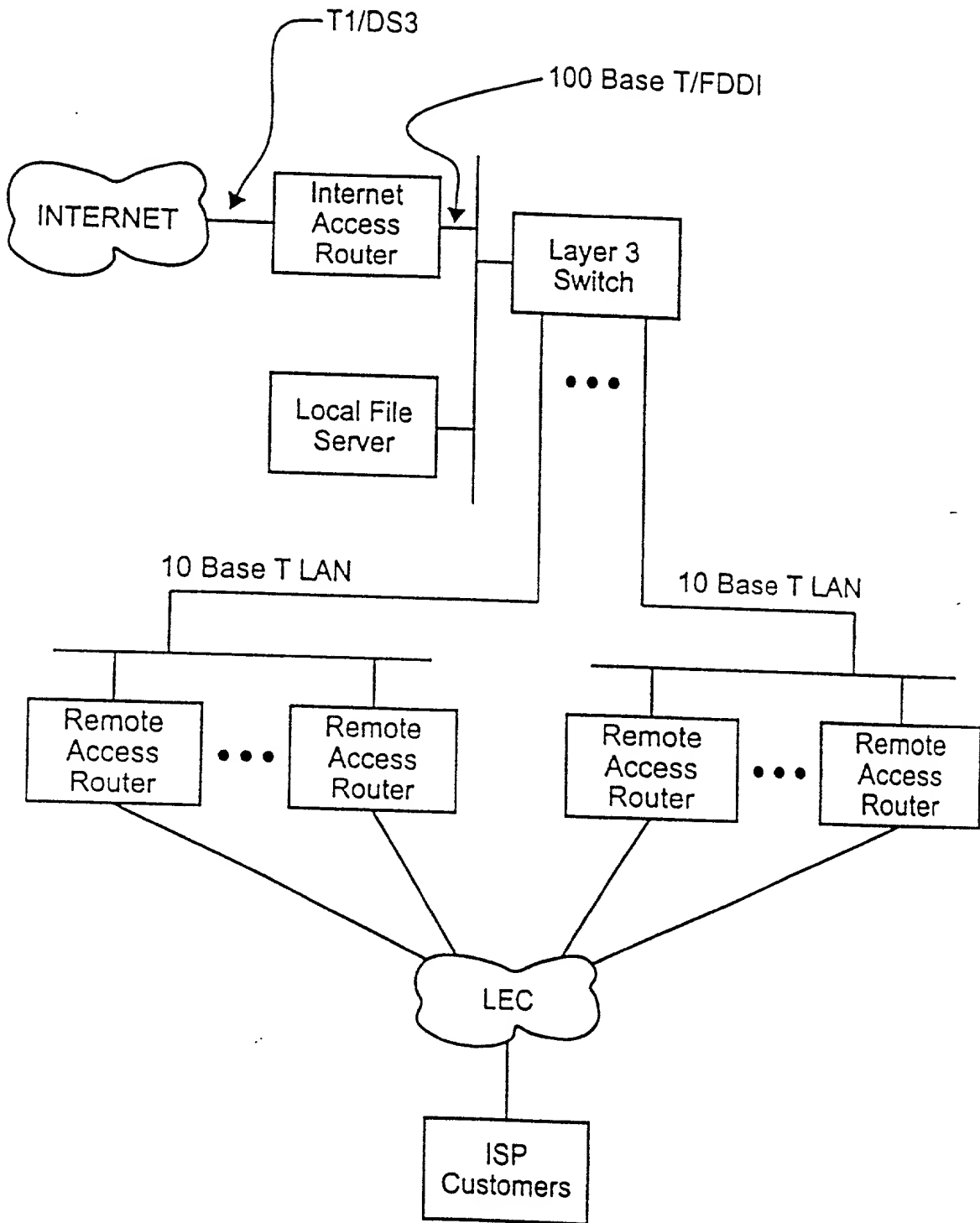


Fig. 28

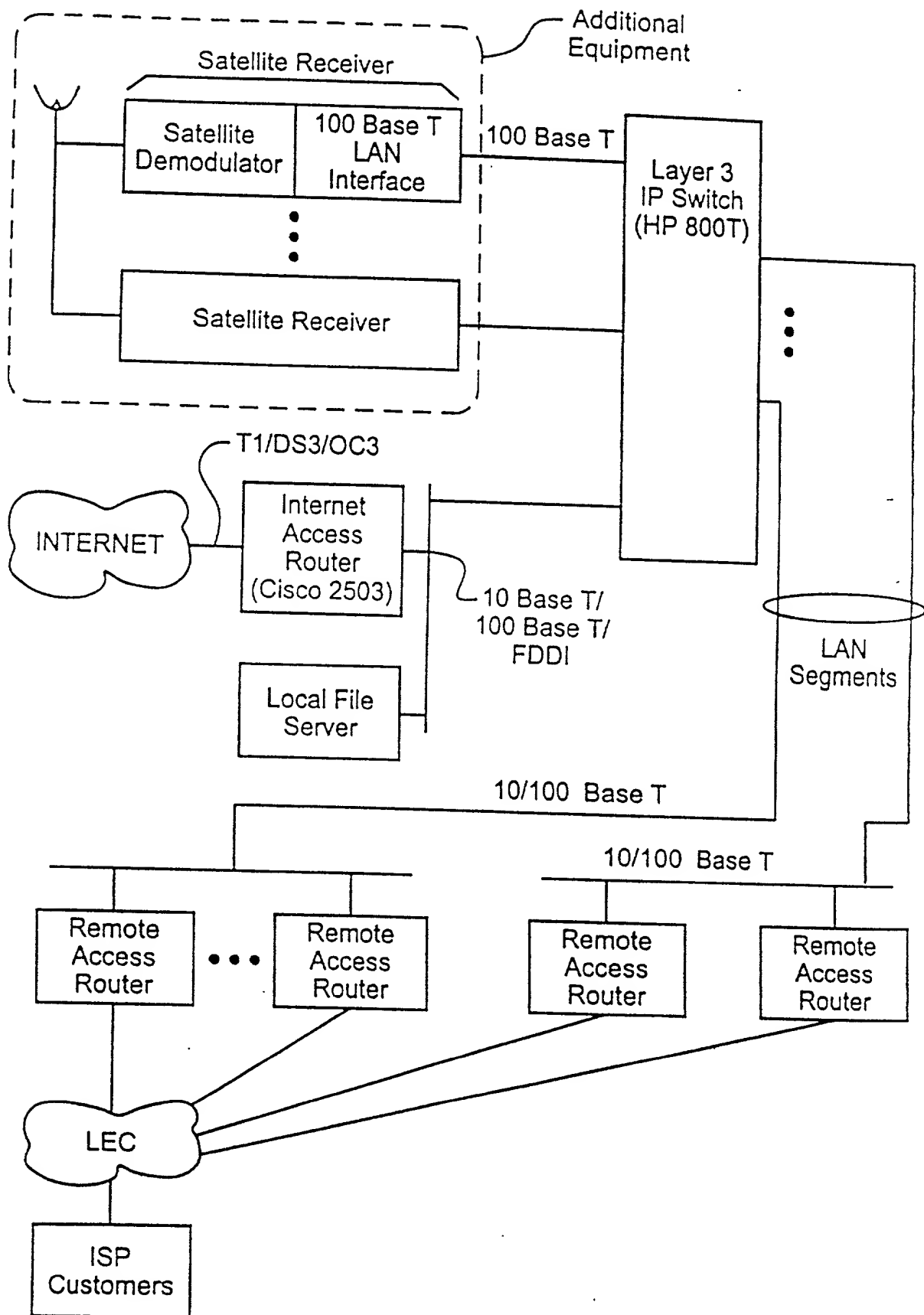


Fig. 29

800'

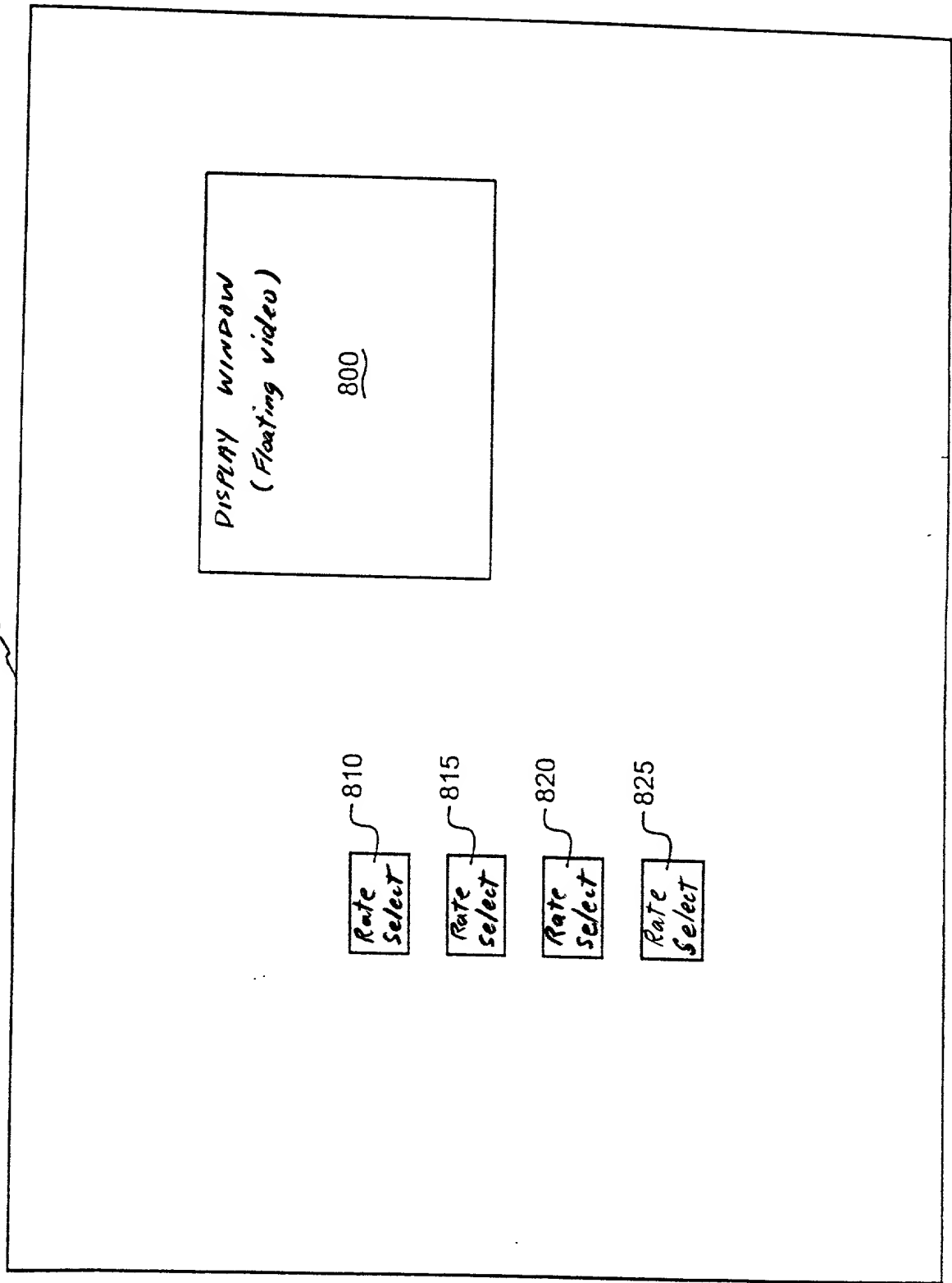
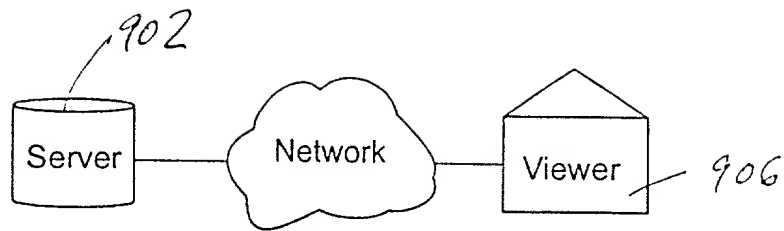


Fig. 30



Example ^{IP data} ~~data~~ Figure 31
Content Distribution

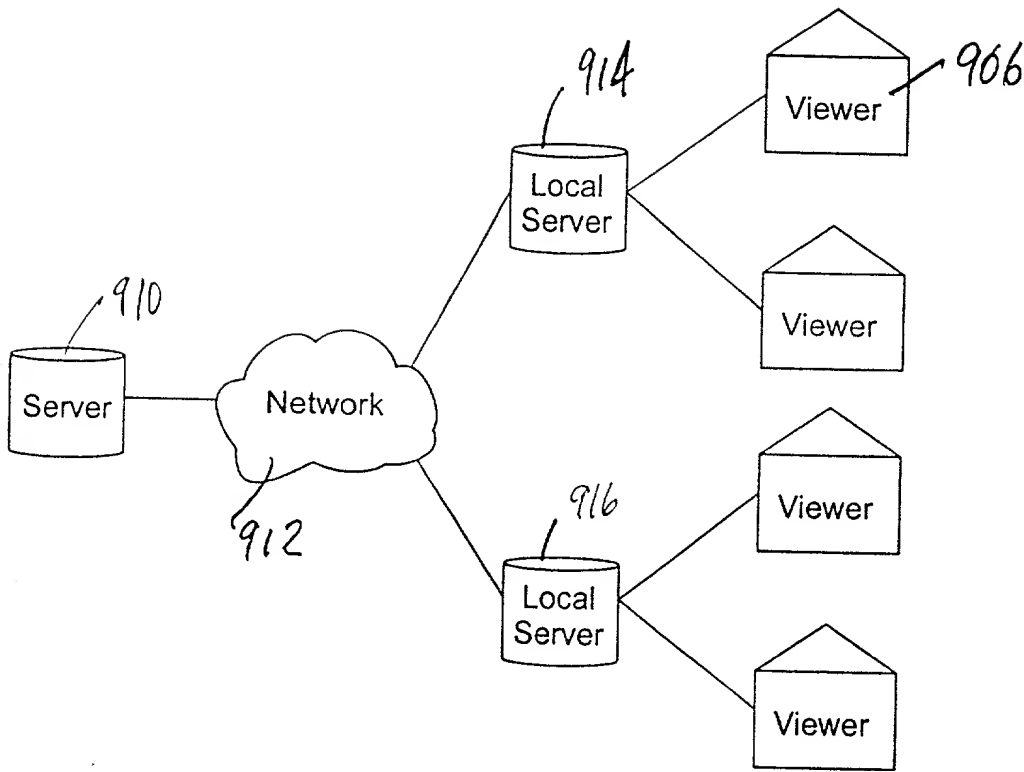


Figure 32
Example Local Video Servers
Audio

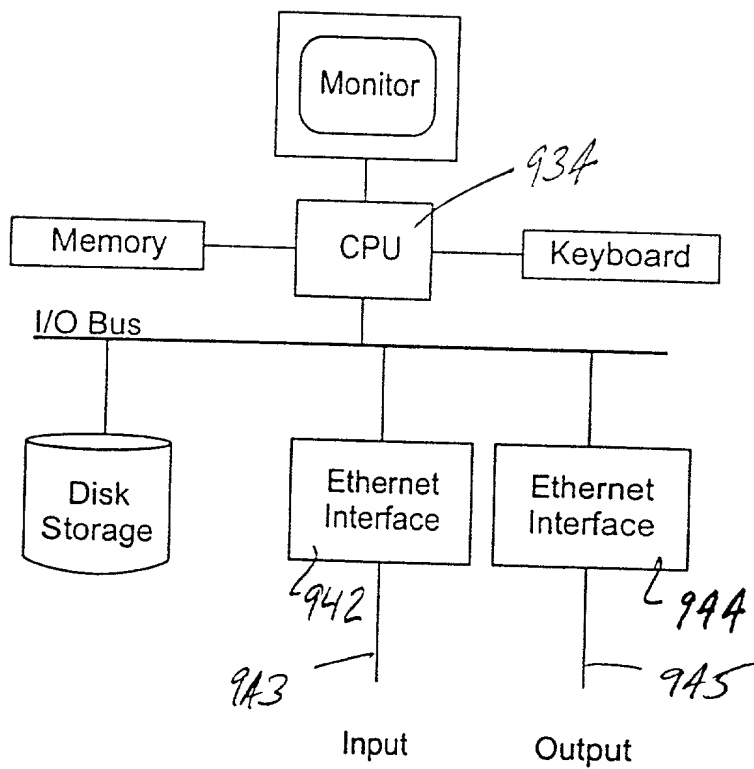


Figure 33
Example Local Server Hardware Configuration

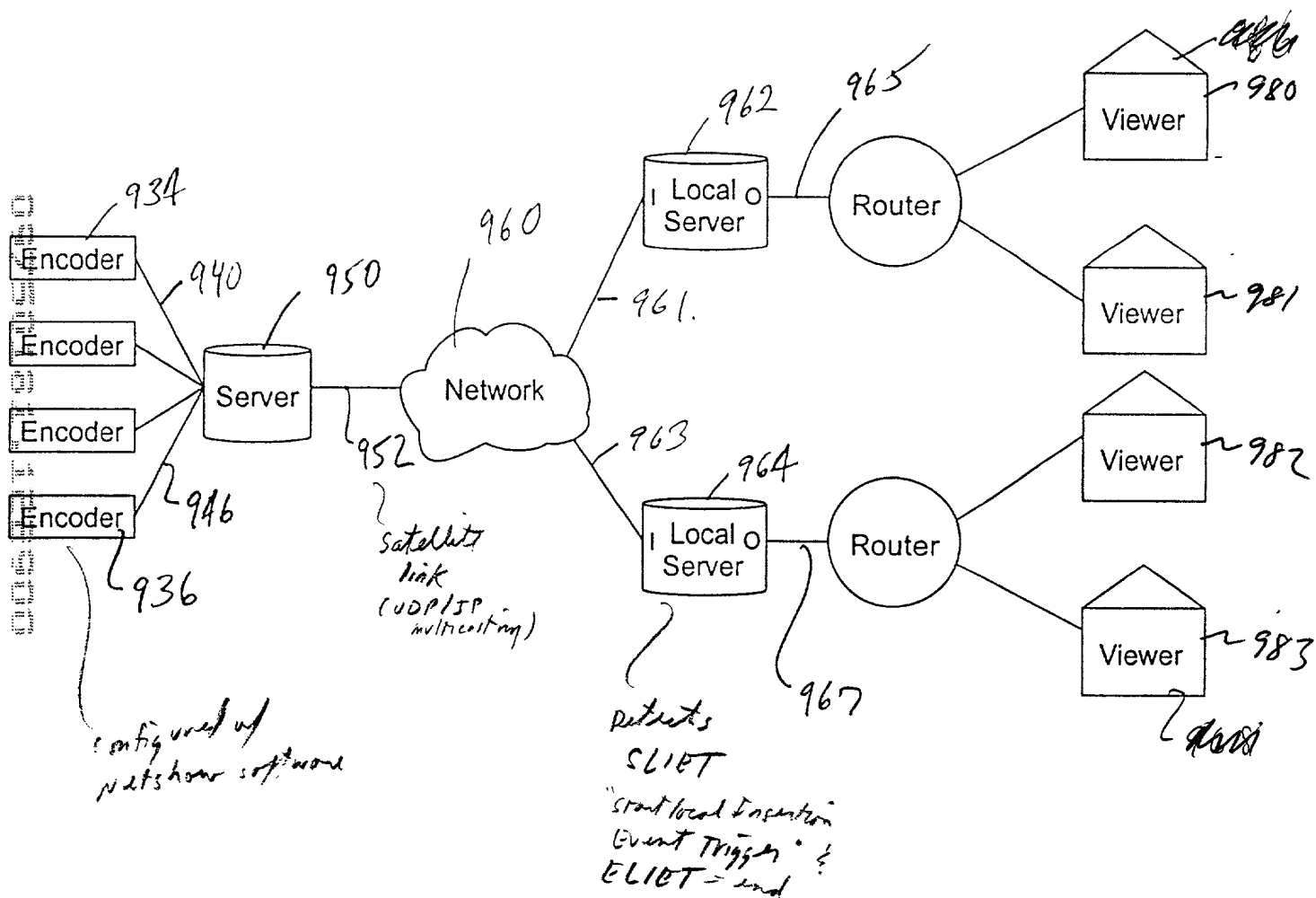


Figure 34
Example Local Multicast Insertion

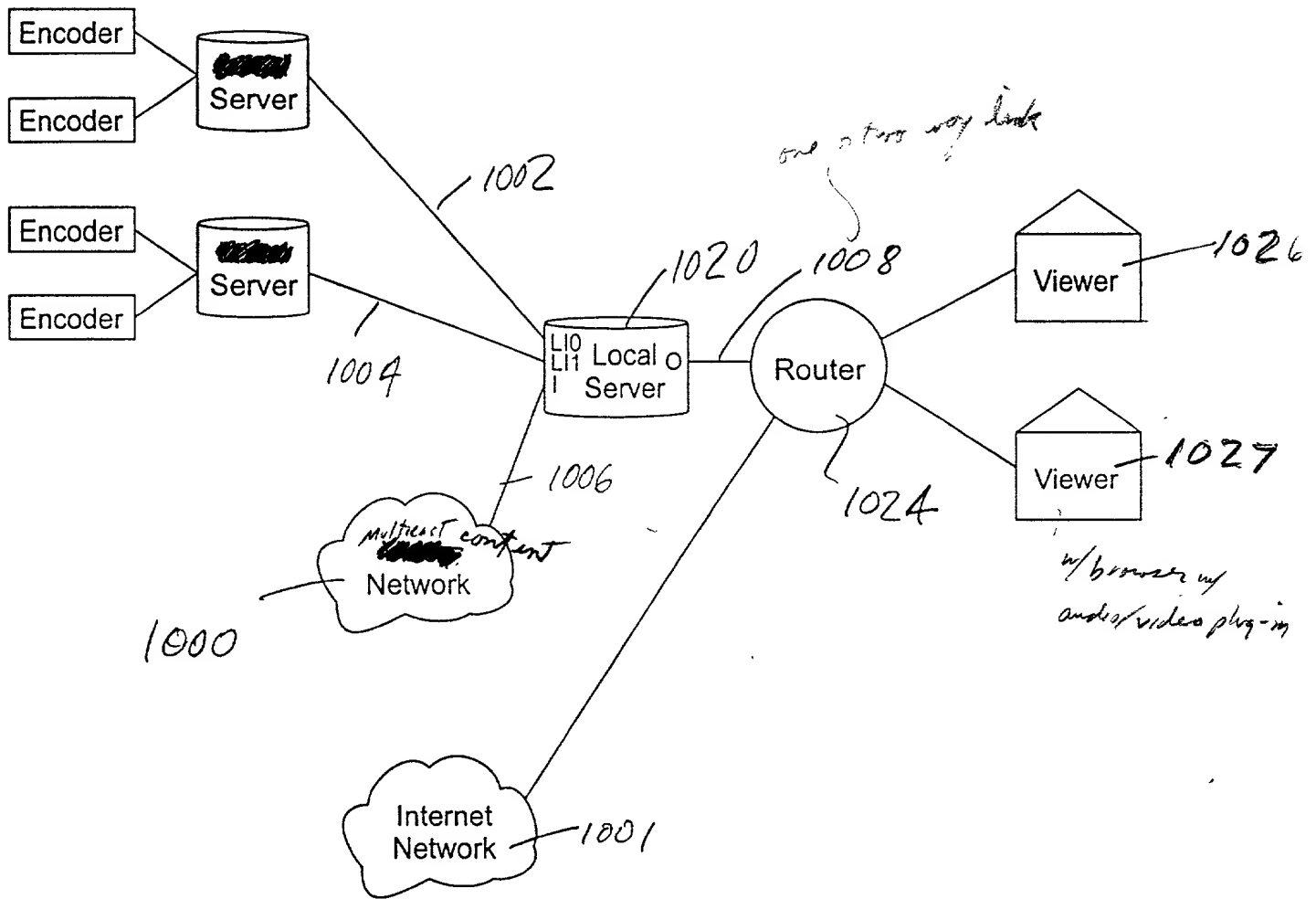


Figure 35
Example Multicast and Internet Configuration

FIG. 36 is a block diagram of a network configuration for a delay play system. The diagram shows a network topology involving a Multicast Network, an Internet Network, and two Time Zones (A and B). Each Time Zone contains a Router, two Local Servers, and two Viewers. The Multicast Network is connected to the Internet Network, which in turn connects to the Routers in both Time Zones. The Local Servers are connected to the Routers, and the Viewers are connected to the Routers. Handwritten annotations include '1050' and '1054' near the Multicast Network, '1072' near the Router in Time Zone A, '1060', '1061', '1062', '1063', and '1064' near the Routers and Local Servers in Time Zone A, and '1080' near the Router in Time Zone B.

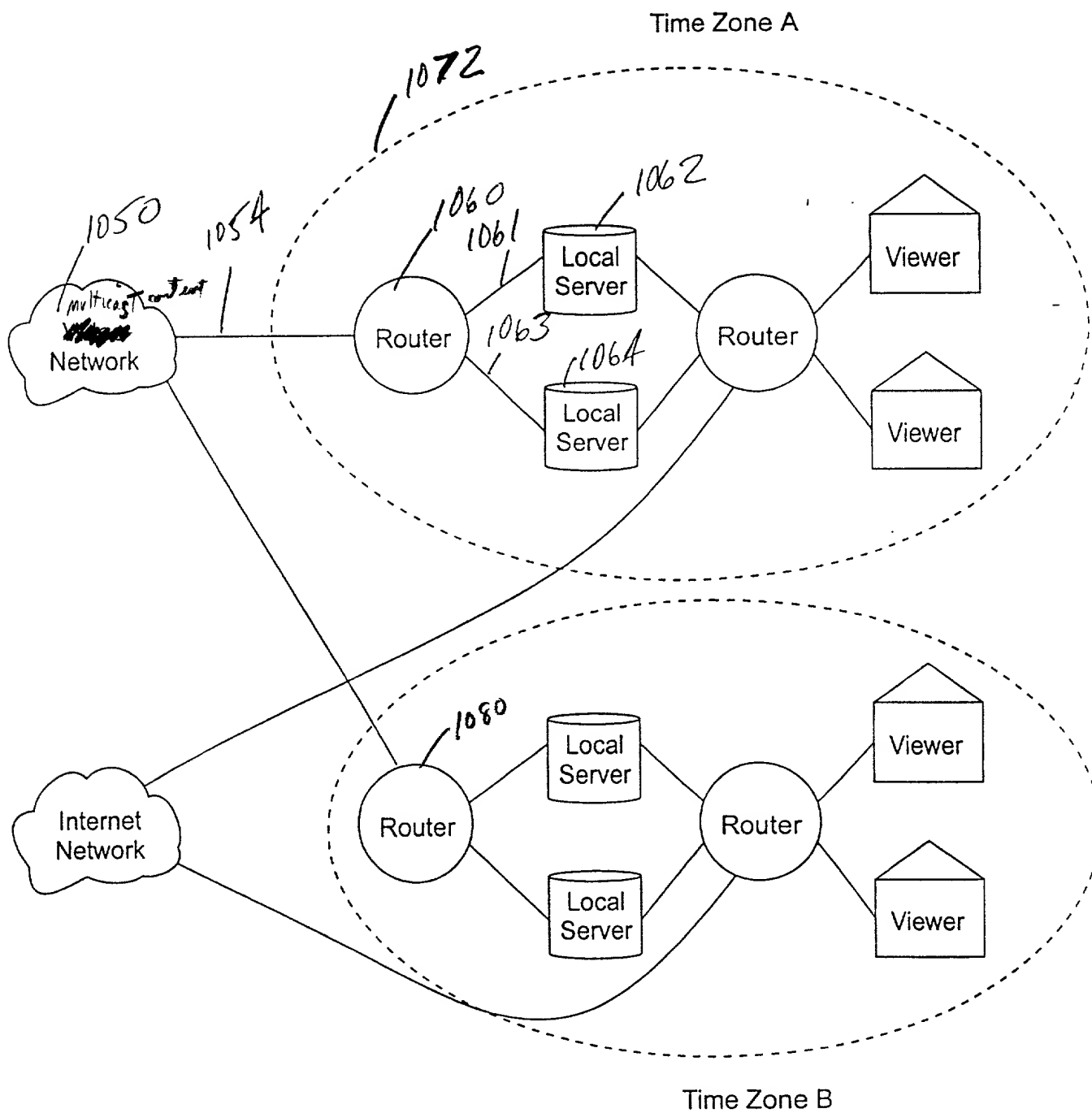


Figure 36
Example Delay Play Configuration

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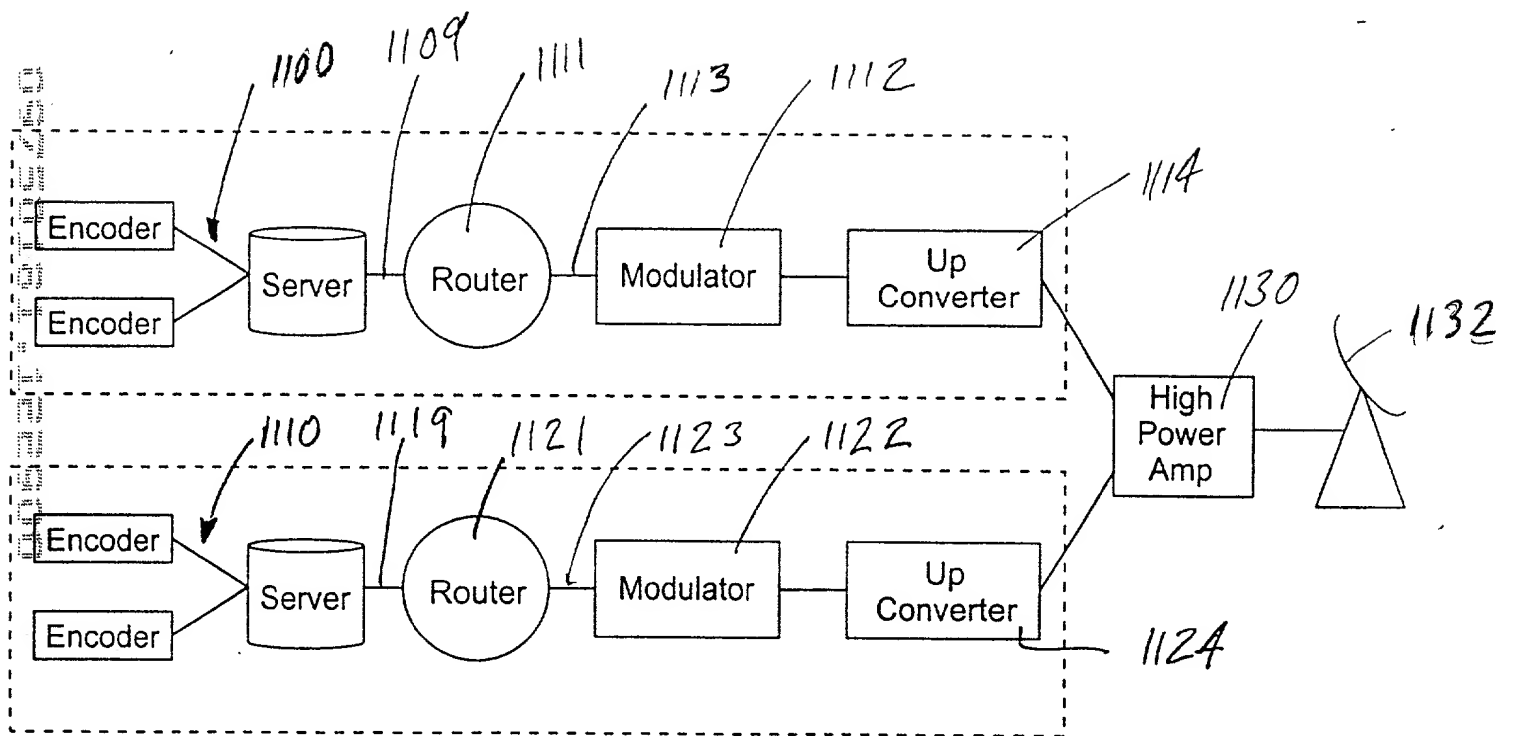


Figure 37
Example Satellite Multicast Uplink Equipment

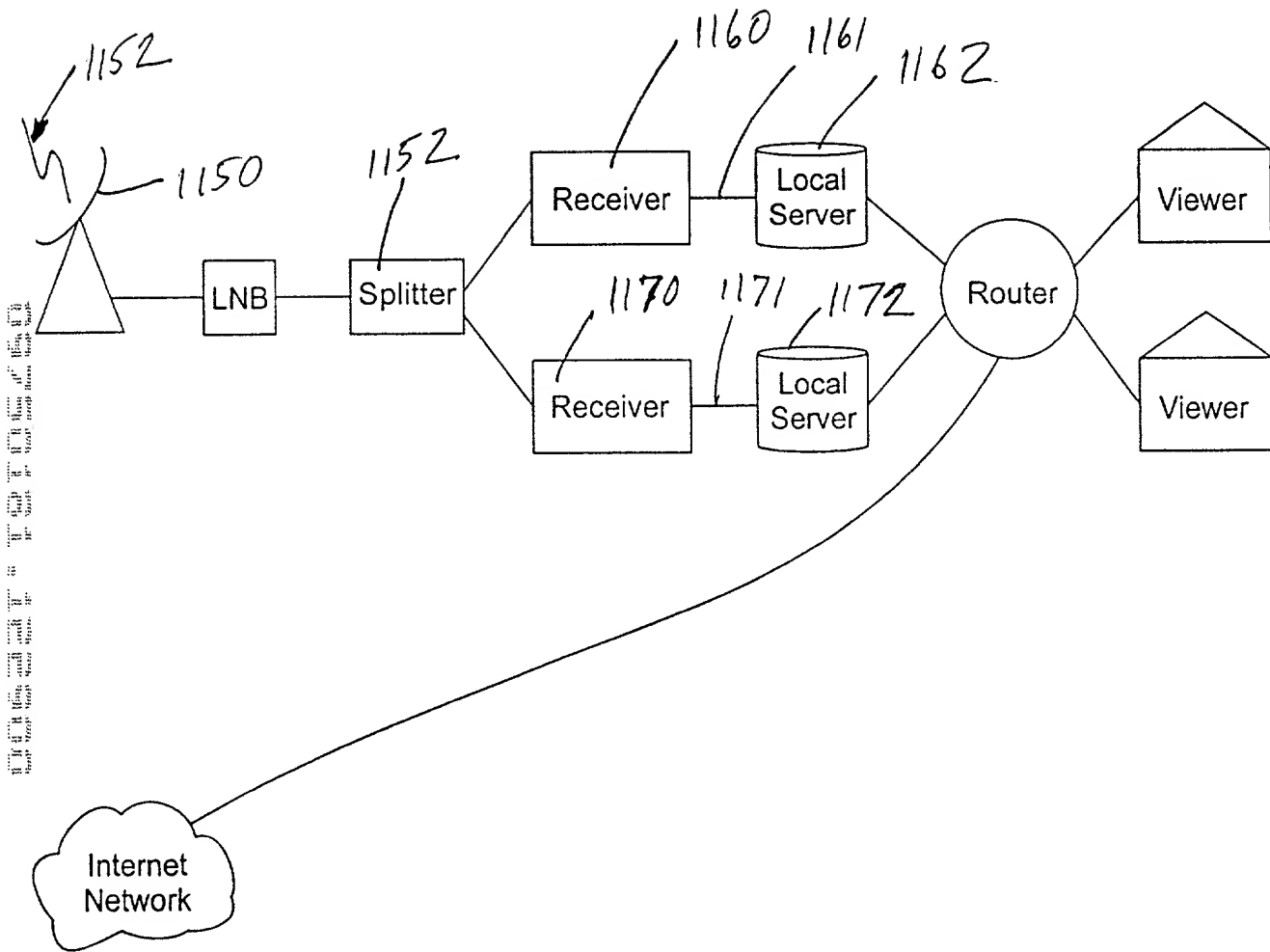


Figure 38
Example Satellite Multicast Downlink Equipment

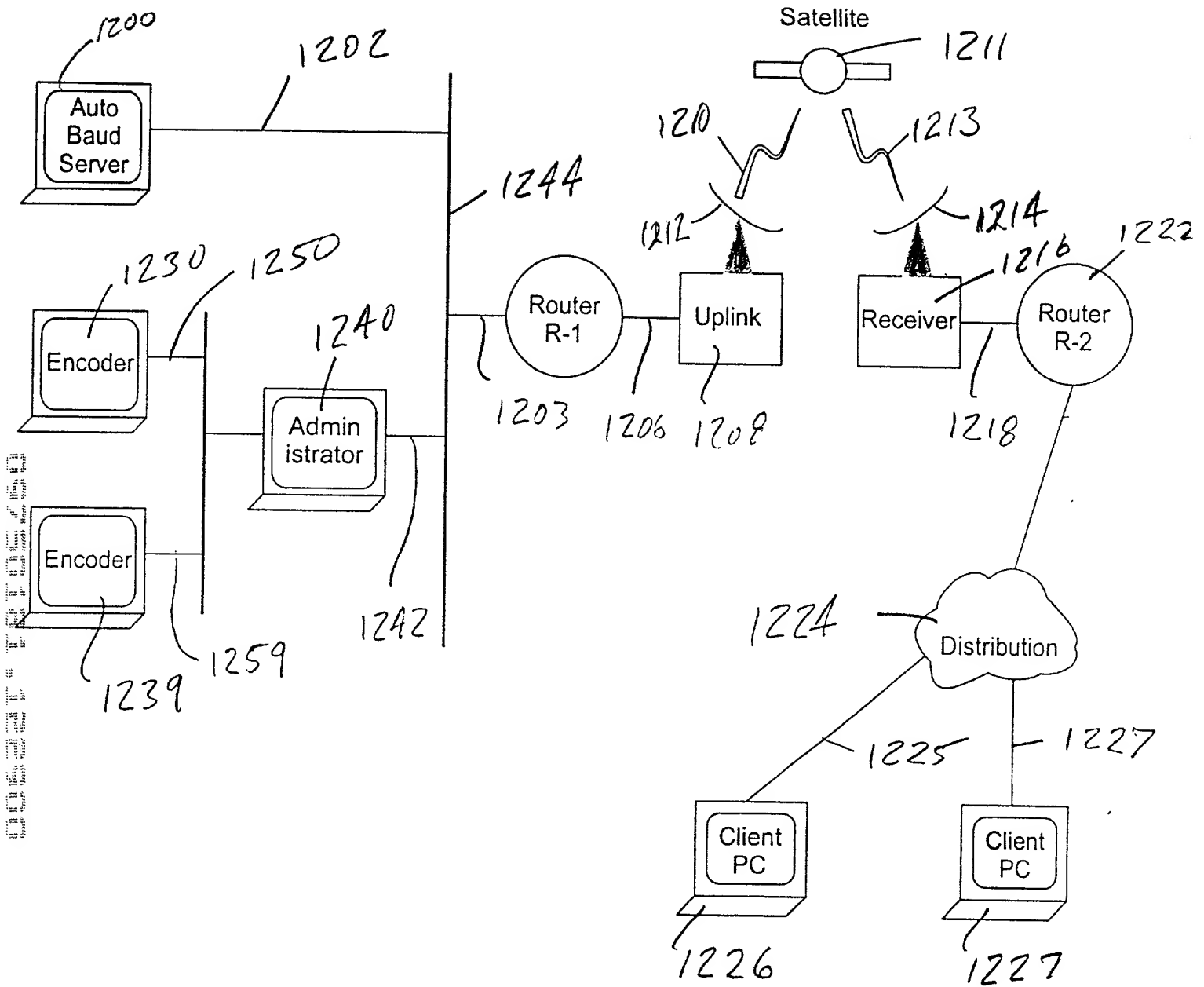


Figure 39
Example Satellite system configuration

612 d 57

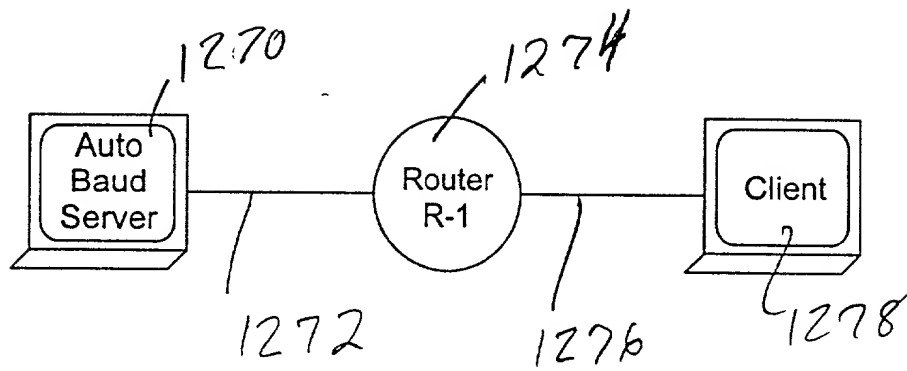
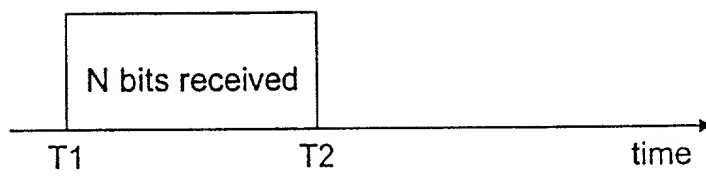


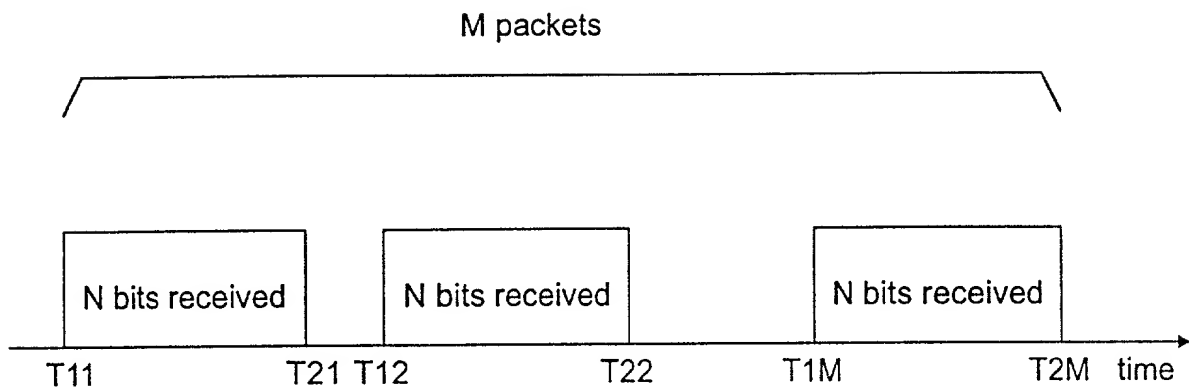
Figure 40
Simplified system configuration



$$\text{Bit Rate} = N / (T2 - T1)$$

Figure 41
Single packet timing diagram

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$$\text{Bit Rate} = (M-1) \cdot N / (T2M - T21)$$

Figure 42
Multipacket timing diagram

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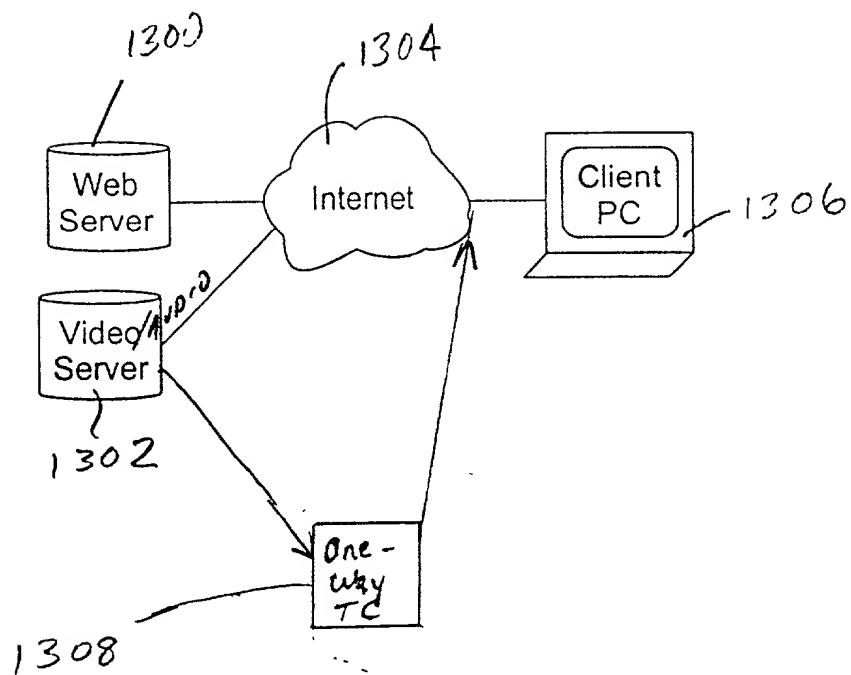


Figure 43
Local Replay System

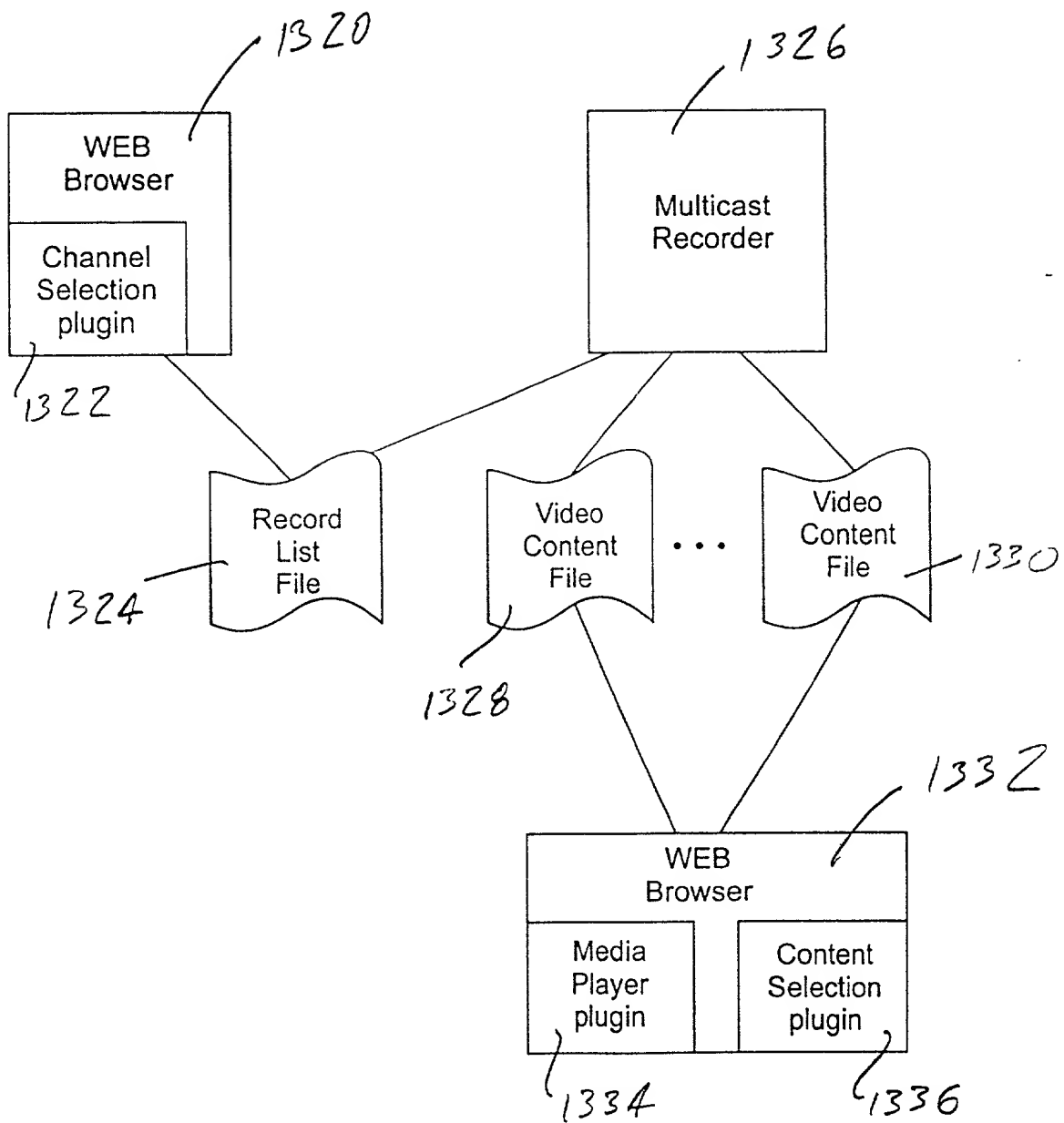


Figure 44
Example Client Software Components

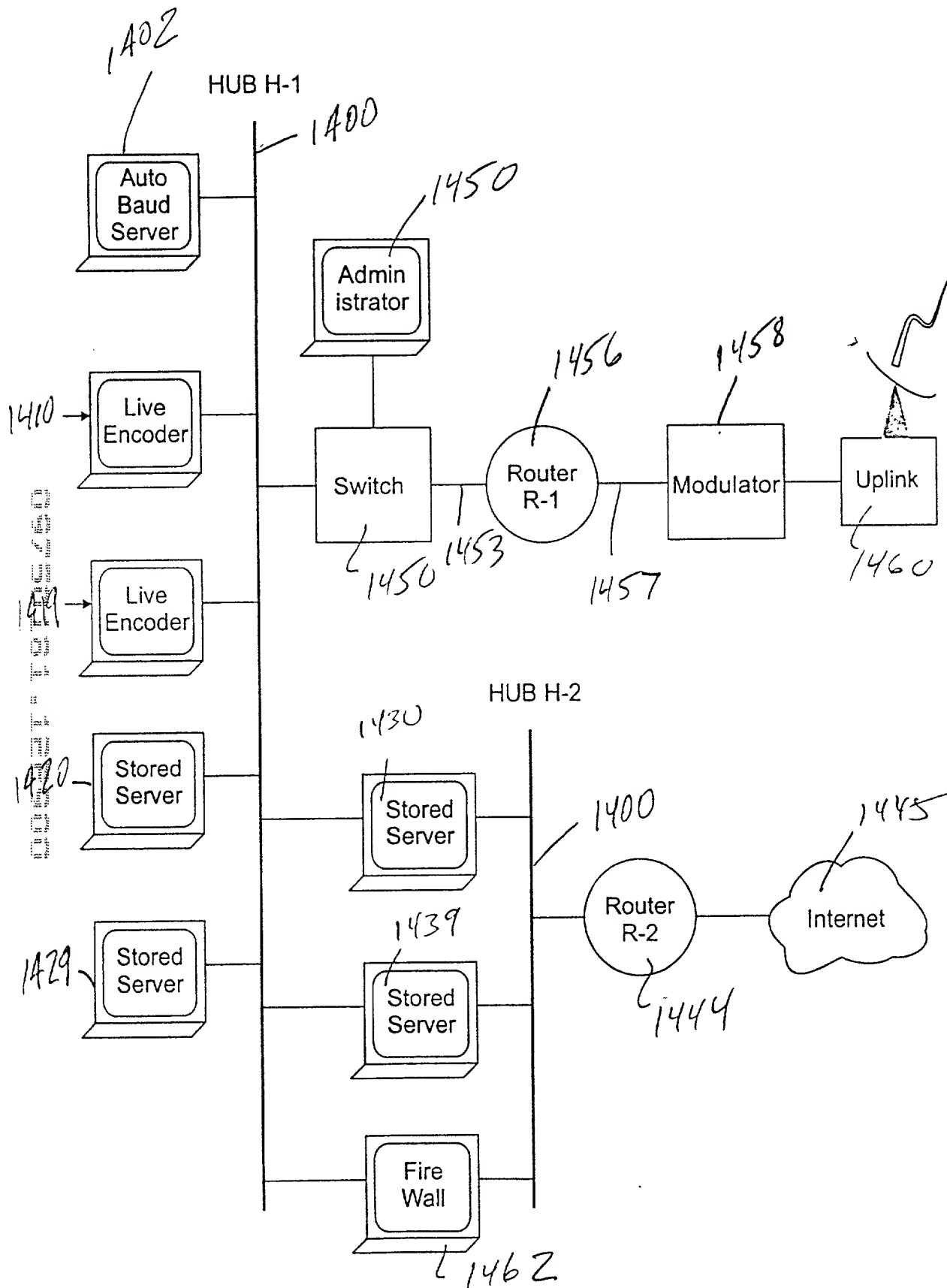


Figure 45
Example Satellite uplink system configuration

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Uplink Equipment List

Switch	HP 800T
Router R-1	Cisco 7205
Router R-2	Cisco 2503
Modulator	Raydyne 3030-HSSI
HUB H-1	Allied Telesys CentreCom FH824U
HUB H-2	3-Com SuperStack-II

AB = AutoBaud Server

LEV = Live Encoder - Video

LEA = Live Encoder - Audio

SS = Stored Server

A = Administrator

FW = Fire Wall

HARDWARE	AB	LEV	LEA	SS/A	FW
Keyboard - Generic	x	x	x	x	x
Hard Disk - Generic 10 Gb	x	x	x	x	x
Floppy Disk - Generic 3 1/2	x	x	x	x	x
Monitor - Generic SVGA	x	x	x	x	x
Memory - Generic 128 MB ECC	x	x	x	x	x
Processor - Dual Pentium-III 450 MHZ	x	x	x	x	x
Mother board - SuperMicro P6DGE	x	x	x	x	x
Ethernet IO - 3-Com 3C905 (2 req)	x	x	x	x	x
Audio capture - Creative 128		x	x		
Video capture - Osprey 100		x			
SOFTWARE					
Operating System - Microsoft NT Server 4	x	x	x	x	x
Encoding - Microsoft Media Services 4		x	x		
Fire Wall - Axent Raptor 6					x

Figure 46

Example Satellite uplink system equipment list

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Example ~~Downlink~~ Downlink Equipment

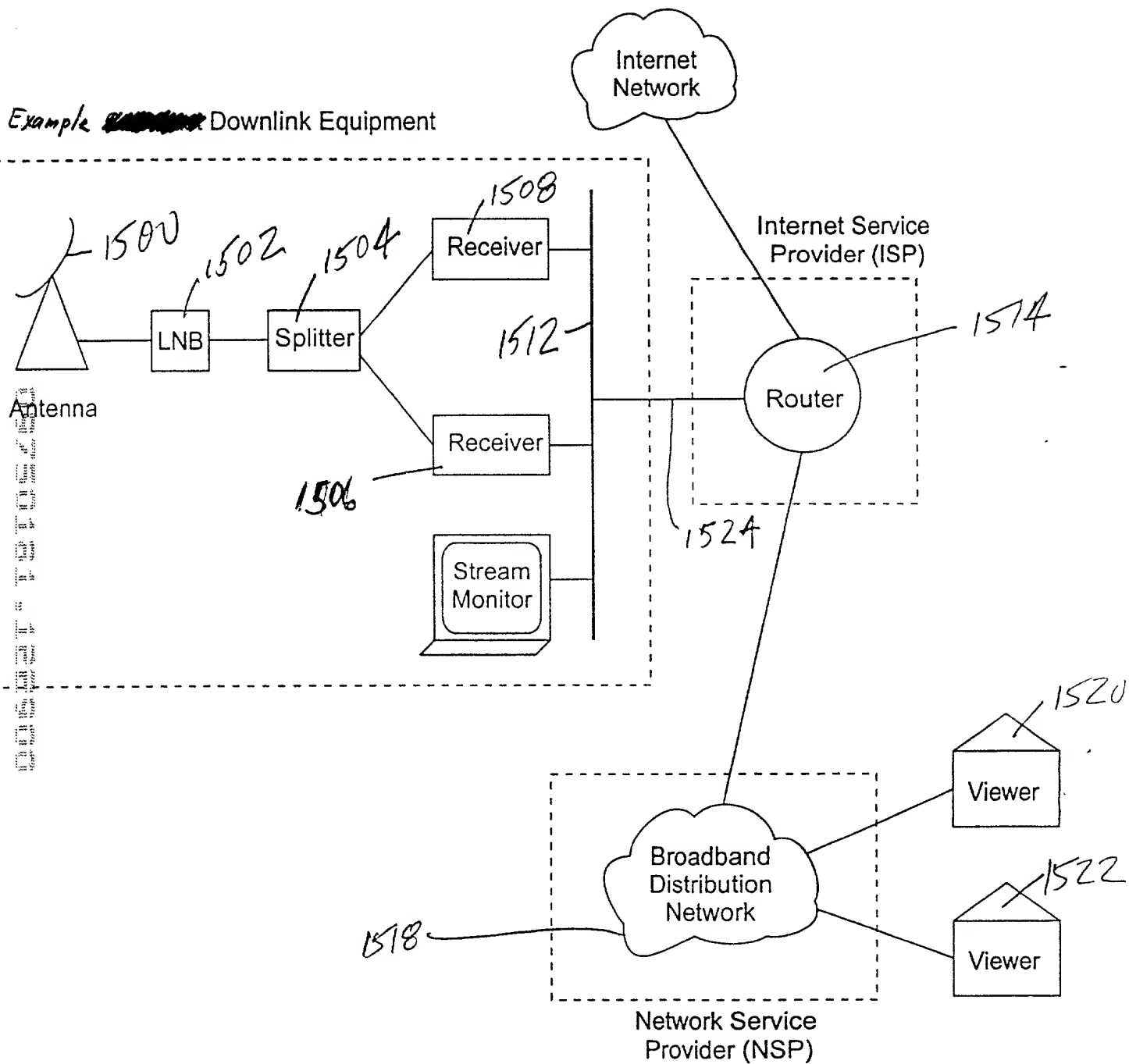


Figure 47

Example ISP Connected ~~Downlink~~ Downlink Equipment

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Example
Downlink Equipment List

HUB Allied Telesys CentreCom FH824U

Antenna Prodlin

LNB ??

Receiver (2req) StarGuide Digital SG-II with 100BaseT Ethernet card

HARDWARE

Keyboard - Generic

Hard Disk - Generic 10 Gb

Floppy Disk - Generic 3 ½

Monitor - Generic SVGA

Memory - Generic 128 MB ECC

Processor - Dual Pentium-III 450 MHZ

Mother board - SuperMicro P6DGE

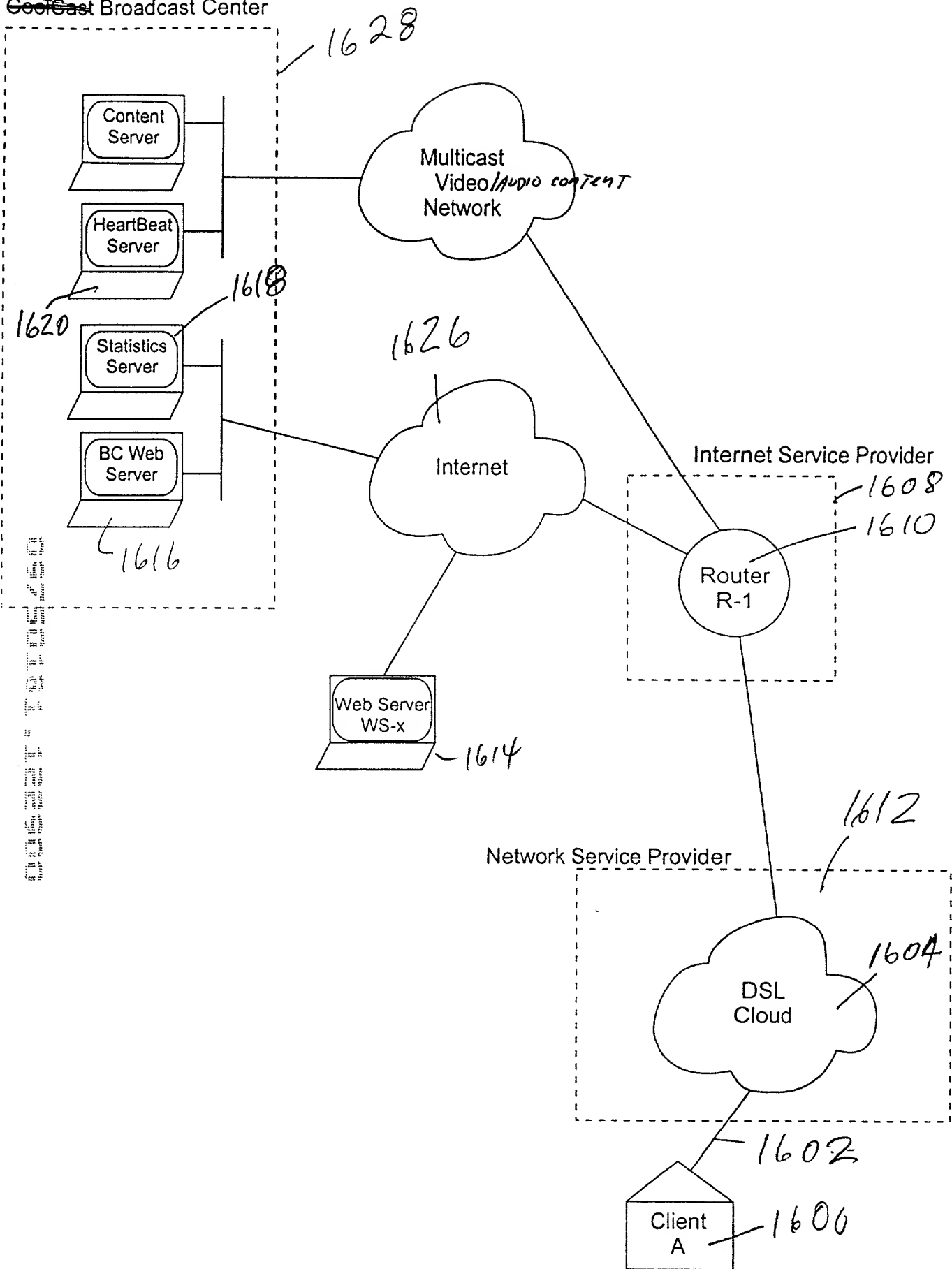
Ethernet IO - 3-Com 3C905

SOFTWARE

Operating System - Microsoft NT Server 4

Video/audio content

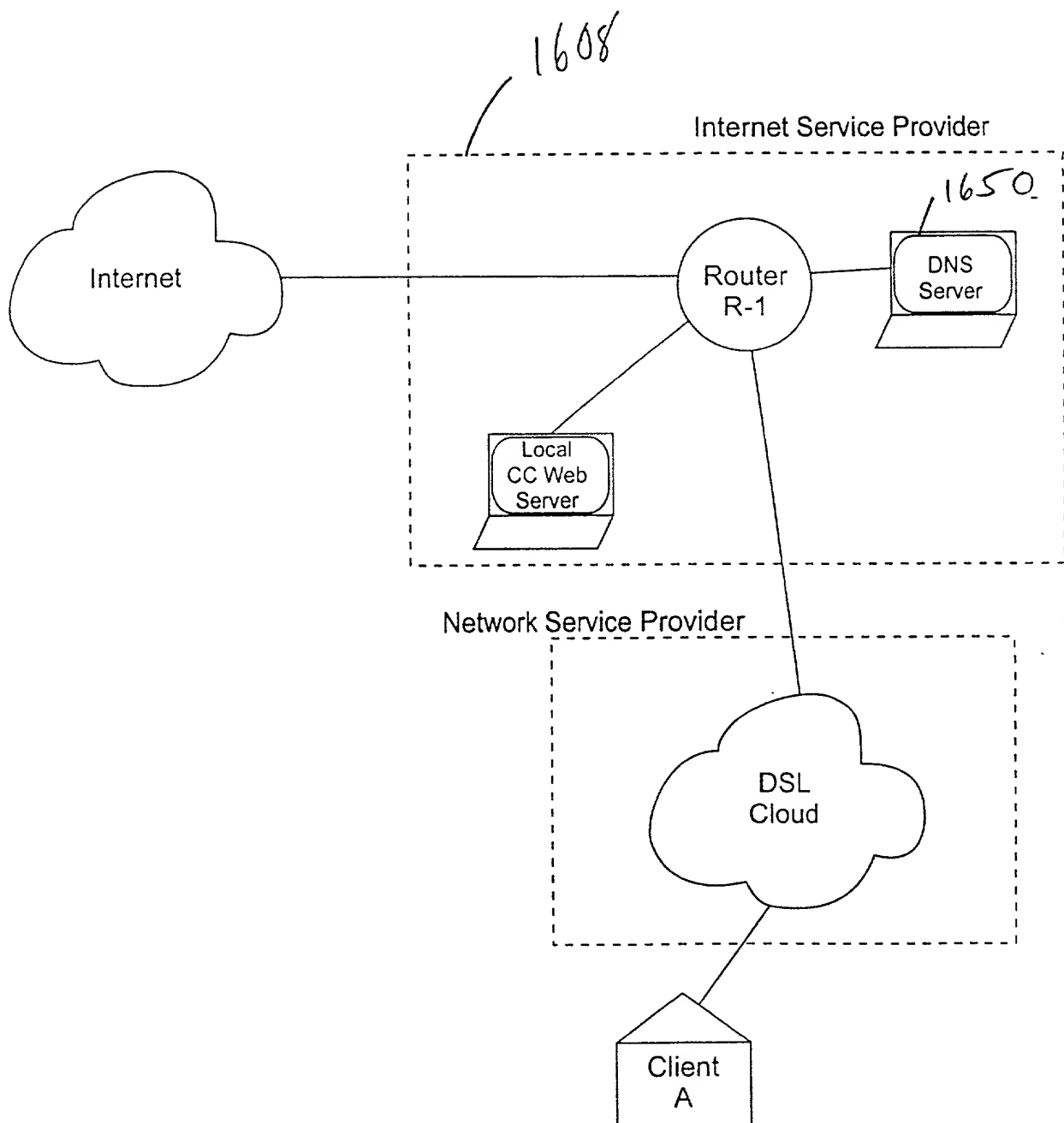
~~Coast~~ Broadcast Center



audio content

Example National Video Distribution Architecture

Figure 50



Example Configuration for Local Co-Branding of National Content

Figure 51

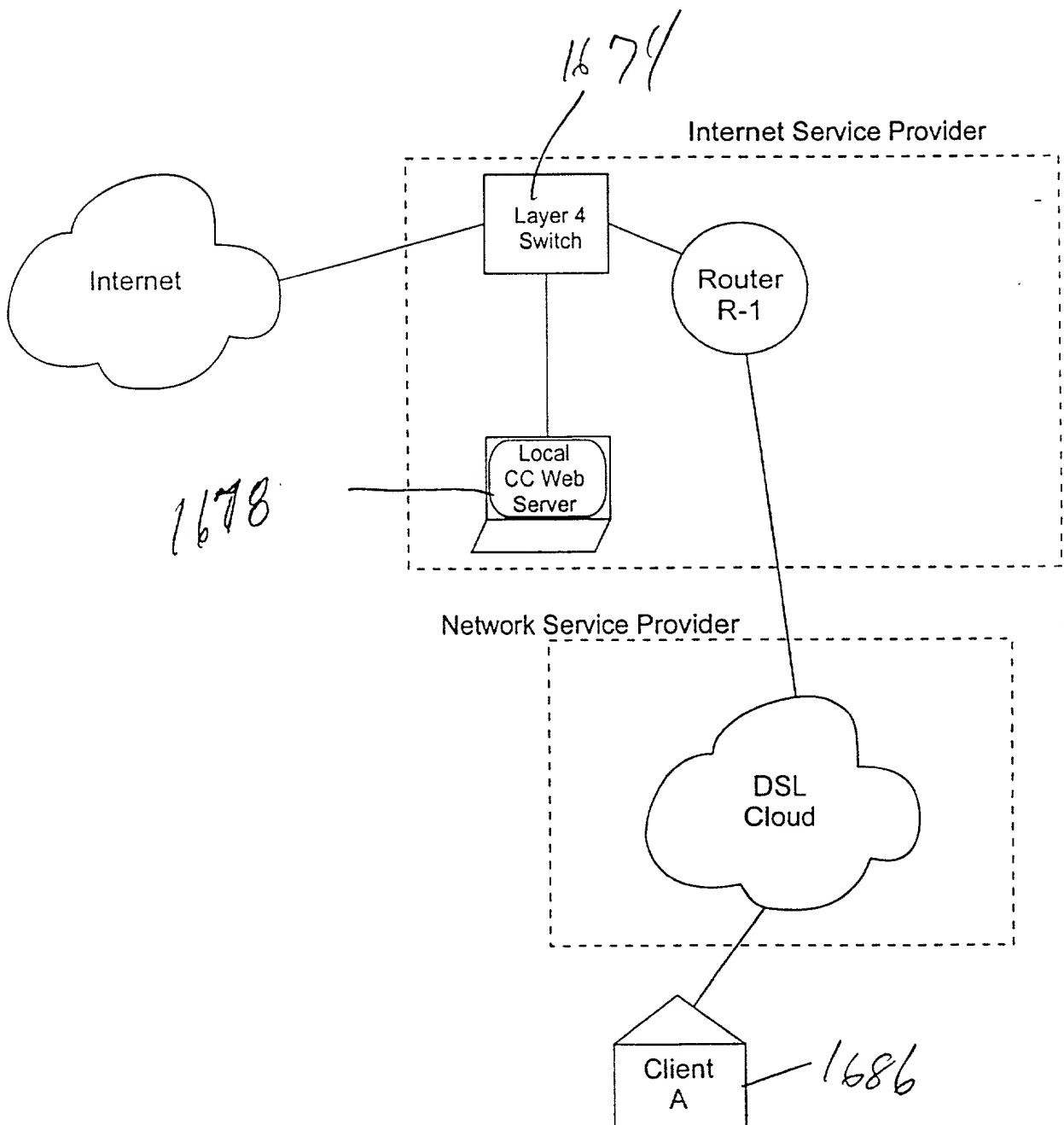


Figure 52

Example configuration for Local Co-Branding of National Content

CoolCast Broadcast Center

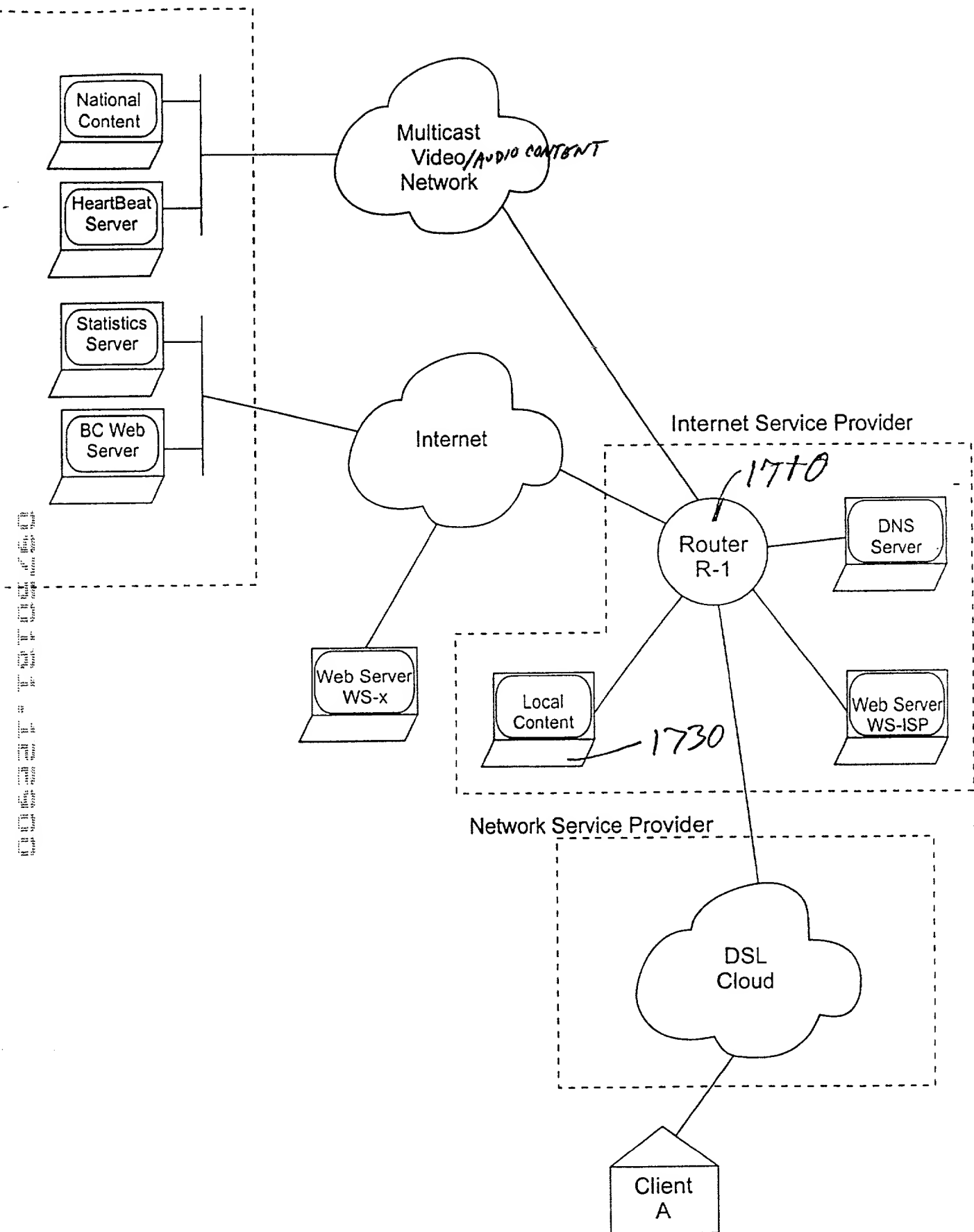


Figure 53

Example Configuration for Local Content Insertion with Local Co-Branding

CoolCast Broadcast Center

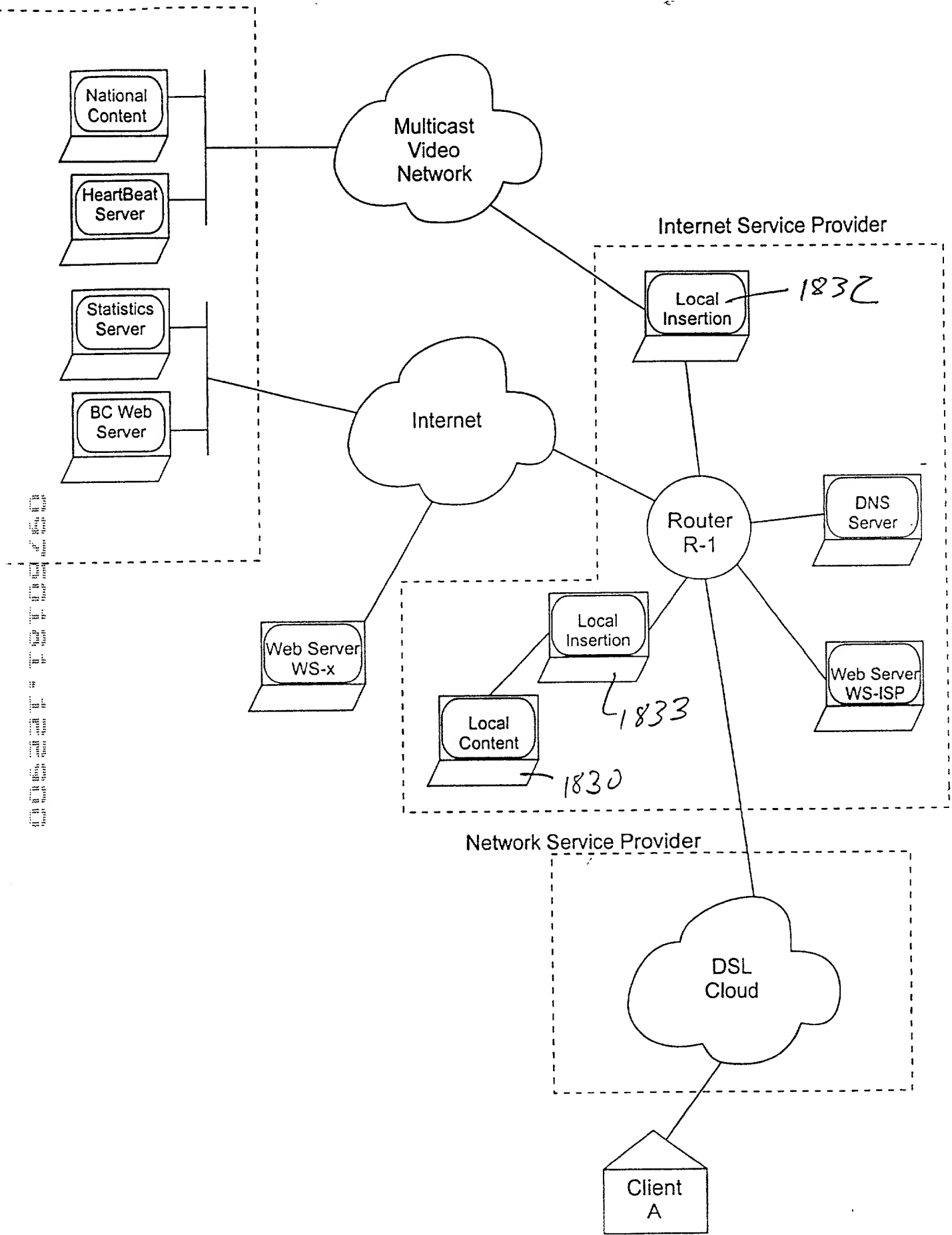


Figure 54

Example configuration for Local Content and Ad Insertion with Local Co-Branding